

 Devoted to 

Goddess Minerva
&
My Dear Parents

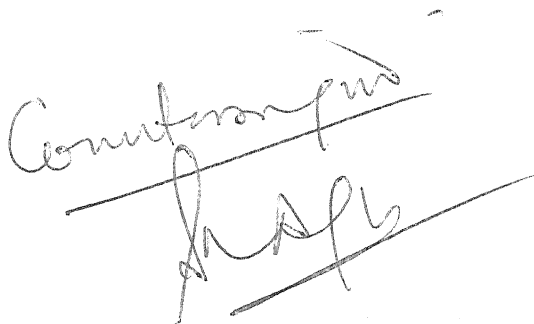
DECLARATION

I hereby declare that the thesis entitled "Production and Marketing of Pulse Crops in Bundelkhand Region" with special reference to jalaun distt. being submitted for the degree of Doctor of Philosophy to Bundelkhand University, Jhansi U.P., is an innovative piece of work carried out with utmost dedication by me and to the best of my knowledge and belief it has not been submitted elsewhere

Jhansi : May 25,..... 1999


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Supervisor

PREFACE

This present study is chosen to aimed for strengthen monetary return and provide new insight to regional farmers in the field of pulse production and marketing in Bundelkhand region.

Pulses have left in Green revolution but pulses are source of cheap and valued food. Pulses are sown in low land and rainfed areas using minimum inputs. Pulses dealt as surplus crop.

This empirical and pioneer task is based on regional observation and findings. Keeping these assumptions in mind, I choose this study "Production and Marketing of Pulses Crop in Bundelkhand Region" with special reference of Jalaun Distt.


I am indebted of various institution as I.A.R.I. & I.C.A.R., New Delhi, Krishi Bhawan, New Delhi, T.M.O.P., New Delhi, I.I.P.R., Kanpur, C.S.A.U.A.T., Kanur, N.I.R.D., Hyderabad, statistical cell commissioner's office & collectrate, Jhansi, Dy. Director, Econ. and stat. Jhansi Division, Econ. & Stat. Officer, Jalaun, Dy. Director, K.U.M.S. (Adm.) Jhansi Division for providing useful figures to make relevant use for need.

I am highly obliged of India's prestigious Institution U.G.C. New Delhi for their financial assistance of carry on my research work. I am also highly obliged of Dr. S.R. Agarwal, My Research Guide, Prof. & Head, Rural Econ. & co-operation, Bundelkhand University, Jhansi.

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I thanks my family members, younger brother for their help. I paid special thanks to Mr. Alike (Alike Type Centre) for typing work and Mr. Firoz Khan (Print Palace Computers) for computer typing, designing. & Printing this work.

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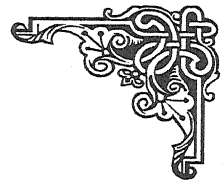

(Phool Chandra Kushwaha)

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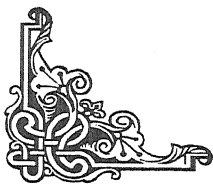
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Chapter - 1



INTRODUCTION

(a) Introduction

In developing countries, particularly in India, the problem of food security is viewed quite seriously considering fluctuation in the production, income availability and intake of requisite food. The diet of the people is primarily cereal based with little intake of other types of food needed for the healthy growth of body which include vegetables, pulses, and fruits. The situation becomes far more critical in view of the rapid increase in population. India has already augmented food grain output from 55 million tonnes in 1950 to 182 Million tonnes in 1992-93¹. The food system, despite huge stocks, is far from satisfactory and continues to be subjected to the vagaries of monsoon. Rice has received major emphasis at the cost of coarse grains, the poor men's diet. The pulse production is lagging behind, resulting in the rise of prices, thus making it all the more difficult for the poor to buy the same. The cereals constitute the major source of calories and are generally available in inadequate quantity, cereals and millets are the cheapest source providing almost three fourth of calories, proteins, mineral and vitamins. Pulses are the main source of protein for the vegetarian population of our society. Besides they form an important segment of the balanced diet. The main reason for the decline in the per capita availability of pulses is attributed to the sluggishness in the growth of area cultivated, thus production and yield (Productivity) of these crops. As a result of excess demand over supply the prices of pulses are raising rapidly, and deficiency in the intake of protein, particularly in case of poor and low income people, is becoming a cause of great concern. This calls for adoption of short term and long term measures for increasing the availability of pulses at affordable prices, In this proposed study an attempt is to be made to analyse the importance of pulses as a major source of protein caused for the decline in per capita availability of pulses, policy implication, marketing efficiency, and future strategy for development of pulses.

1. Kumar Dalip et al, Yojana, changing pattern in prod. & consumption of Food items in Haryana PP-17, M/o Information and Broadcasting, & Broadcasting, G.O.I., New Delhi- (Vol. 38, Nov. 15, 1994)

An appropriate combination of pulses (Particularly rich in lysine) and cereals (deficient in lysine) which are complementary to each other, provide a good amount of protein. This combination is the cheapest source of protein in India. Pulses are of immense value not only for human nutrition but also for agriculture and dairy farming. Straw and husk of cereals used as cattle feed are deficient in lysine whereas legume hay is rich in amino acids and makes a valuable addition to cattle feed. The cultivation of legume also increases the nitrogen content of the soil as the roots of the most leguminous plants contain nitrogen-fixing bacteria which convert atmospheric nitrogen into nitrates and nitrites. The nitrogen depleted from the soil by cereal cultivation can be replenished by adjusting it with pulse cultivation. They can be grown even in tough agroclimatic conditions. In addition, pulses contain more protein as compared to other cereals as shown in the table.

TABLE-1

Protein content in pulses and cereals in 100gms.

Pulses	Protein	Cereals	Protein
Arhar	22.3	Rice raw milled	6.8
Moong	24.0	Rice parboiled	8.5
Masoor	25.1	Wheat flour	12.1
Urd	24.0	Maize	11.1
Gram (Whole)	20.8	Jowar	10.4
		Bajra	11.6

Source of ICMA - Nutritive value of Indian Foods (Yojana) Brij Bhushan and Renu Sobti, Yojana, Vol. 36 No 13, July 1992, Ibid Min Information & Broodcasting, Pub. Divn, G.O.I., New Delhi.

Though total dietary protein intake is almost the same as recommended by ICMR, protein derived from different food stuff is not balanced. In the balanced diet, milk combined with appropriate cereals and pulses

provide a good amount of protien. The pattern of diet that is based on protien from milk and pulse is low, though meat and egg provide high amount of protieirr, their per capita consumption is very low. It is 4.3 gms per day and 0.02 piece per day respectively. maximum amount of protein in India, thus can be derived from higher consumption of cereals but that does not fully meet the physiological requirements of the human body and it may be harmful in the long run. The following table reveals the growth of area, production and yield of pulses.

TABLE - 2

Growth of Area, production and yield of pulses.

<i>Year</i>	<i>Area Mill. Ha.</i>	<i>Prod Mill Tonnes</i>	<i>Yield Kg/ha</i>
1950-51	19.09	8.41	441
1960-61	23.56	12.70	539
1970-71	22.54	11.82	524
1980-81	22.46	10.63	473
1989-90	23.22	12.61	543
1990.91	N.A.	14.02	N.A.

Source Yojana, Vol 36 No-13, July 31, 1992 M/o Inf. and Broadcasting, G.O.I., New Delhi PP 20.

The following table reveals the disparity in relative & inter state productivity.

TABLE - 3

Inter-state Disparity in pulse productivity

<i>Yield & Kg per Ha</i>	<i>No. of state</i>	<i>Name of the state</i>
More than 800	1	U.P.
700-800	2	Punjab, Kerala,
600-700	3	Bihar, Haryana, West Bengal
550-600	2	J & K and M.P.
500-550	3	Orrissa Maharashtra, Gujarat
<i>(All India average to 550)</i>		
Below 500	6	A.P. Assam, H.P. Karnataka Tamil Nadu, Rajasthan.

Agricultural policy and planning adopt in the past, lacked a balanced approach to the development of the food crops. As a result. Pulses grown in the rainfed areas received inadequate attention the cultivated Area, remained almost static over the last four decades. Expansion of area under pulses showed no improvement over the past four decades. It remained static at the level of 20.0 to 23.0 Million ha. in the 80's It registered a negative growth rate of 0.26% from 1949-50 to 1989-90.

Although the rate of production was not rosy and production facing up and downswing and stagnation, it reached an all time high of 14.02 million tonnes in 1990-91 as against 8.2 million tonnes in 1949-50. But this enhanced production shows a marginal increase of 6.6% over the previous peak of 13.15 million tonnes achieved in 1958-59. Long term growth rate of pulse production from 1949-50 to 1989-90 compared to 5.82% growth rate for wheat and 2.5% growth rate for rice, In the 80's pulse production as witnessed by a growth of 1.97% p.a. In the recent years, the average production of pulses for the seventh plan

works out at 12.5 million tonnes which indicates an increase of 7 lakh tonnes (i.e. 6.1%) over the Sixth Plan's figure of 11.8 million tonnes. With regard to productivity of pulses it increased with wide fluctuations- 576 kg/ha, in 1990-91 and 405 kg/ha in 1949-59. Thus the rate of growth was pretty low-0.29% as compared to 1.73% in rice and 3.21% in wheat. In 1990-91. The yield of pulses was estimated at 576 kg/ha which is lower than the yield of rice which was 1951 kg/ha and that of wheat 2274 kg/ha. This shows that pulses have been lagging behind the development of other food crops during the last 40 years. The big push concept of development was not adopted for pulse crops as done in case of wheat. Trends in the growth of area, production and yield may be seen in table.2¹.

Pulses are mainly grown in 17 states, of these 5 states, mainly madhya Pradesh, Uttar Pradesh, Maharastra, Rajasthan and Orrissa account for 70% of the total production. Pulse yield below the all India average of 550kg/ha in respect of 9 states which together account for 58% of the total area. Besides, there exists a wide regional disparity in pulse sector as may be seen from table3².

About 92% of pulses are grown in the rainfed areas. The erratic and uncertain behaviour of monsoon affects the timely sowing of these crops. Marginal and sub-marginal lands which are poor in fertility are used for pulse cultivation. When irrigation water is available or land productivity improves, cropping pattern of rainfed area become more unfavourable to pulses. Most of the pulse growers are small and marginal farmers who are unable to make adequate investment on pulse development due to two factors namely (1) financial bottleneck and (2) high risk. Financial assistance of commercial banks is also not available to these categories of farmers due to the some reason. Thus poor economic condition of small and marginal pulse growers is another constraint on development activities relating to pulse crops. There is no Government

1 & 2 Source - Yojana, Vol 36 No13 July 31, 1992, M/s Inf & broadcasting, GOI, New Delhi. PP 19-20.

support like crop insurance for the pulse growers to encourage them to go in for higher investment and production.

Pulses are highly prone to large number of insect/pests and diseases as compared to cereals and other crops. Several fungal bacteria and viral diseases cause heavy damages to pulse crops. pests like podborer, jassids, thrips, bugs and others, mostly feed on these crops and reduce their productivity. There is no national programme for eradication of pests and diseases in pulse cultivation.

No break-through has so far been achieved in the development of HYV of pulses as in case of wheat and rice. Besides, there is no effective mechanism for facilitating the transfer of latest research findings/technologies developed by Research bodies, institutes and field workers. Old and conventional post harvest technology reduces the marketable surplus of pulses. As per ICAR estimates, about 1.5 Million tonnes of pulses valued at Rs. 750 crore are lost every year due to inefficient milling of pulses.

Among pulses gram (Chickpea) and arhar (Pigeon Pea) are two important crops, the share of these two crops together account for 43.4% of the total area contributing about 50% to total production. There are other important pulses like masoor, moong and urd which contain more protein. Yield of these crops are comparatively low, varying between 300-400 kg per ha. All out efforts are required to push up the production and productivity of these pulse crops. Area under each of these pulse crops is comparatively small. Arhar (Tur) pulse is consumed more both rural and urban area followed by masoor, moong and urd. But there is no package for balanced development of all the important pulses. Consumption pattern which is more favourable in respect of Arhar, Masoor, Moong and Urd may be seen from table - 4

TABLE - 4

Consuming of pattern of pulses in the Rural and Urban areas during 1988-89

<i>Pulse</i>	<i>Rural</i>	<i>Urban</i>
<i>Arhar</i>	29.41	36.18
<i>Masoor</i>	15.29	12.77
<i>Moong</i>	12.94	15.96
<i>Urad</i>	11.76	11.70
<i>Gram</i>	9.41	9.57
<i>Peas</i>	2.35	1.06
<i>Other pulses</i>	18.84	12.76
	100.00	100.00

Source. - Yojana Vol.-36, No.-13, July 31, 1992

Traditionally pulses have been one of the cheapest source of protein in Indian diet, but so far many people depend on 'dat-roti' or 'dat.bhat' only a few of studies have indicated the problems clear dealing trend in daily per capita availability of pulses is observed since 1959, when this figure was around 75gms. By 1971 this availability has adapted to 51.3gms per capita per day and further to 38gms in 1984-85 as against the FAO/WHO recommendations of minimum requirement of 80grms per capita per day. This decline is due to an increase in population as one hand and decline in production of pulses on the other which is largely effected by a decrease in the area under pulse crops.

India has distinction of being world's largest producer of grain legume (Pulses) where different pulses are grown over an area of 22.23 Million ha. adding 10-12 million tonnes of grains to the food basket of the country. The major pulses growing states in the country, in order of their significance are Madhya Pradesh, Rajasthan. Uttar Pradesh, Maharashtra, Orrissa, Andhra Pradesh, Haryana and Tamil Nadu.

Uttar Pradesh thus occupies third place in pulses production in the country. But the production of pulses is inadequate and has shown a

declining trend due to decrease in area. The area under pulses in U.P. was 45.47 Lakh hectares in 1960-61 which dropped to 37.25 Lakh hectares in 1970-71 and further 29.29 lakh hectares in 1984-85. Against this situation, the productivity of total pulses on per capita basis more or less remained constant around 7.8 quintals per hectare during the above periods. As stagnation or very slow growth of pulses has become serious concern of planners and policy makers.

According to Uttar Pradesh ke Krishi Aankade'1986-87 the total area under pulses was 3110547 hectares producing 2665713 M.Tonnes of pulse production. Its average yield was 8.5 quintal/per ha. This trend declined in 1987-88, the total area under pulses was 2977830 hectares adding 2361793 M tonnes of pulse production. Its average yield was 7.93 quintals/per ha. in U.P. In 1986-87 the total area under pulse production was 930870 hectares producing 770837 M.Tonnes of pulse producing its average yeild was 8.28 quintal per ha. in Bundelkhand region.

Pulses are almost untouched by green revolution therefore stagnant production level of pulses has led to rising prices. One of the important incentives to the farmers for raising a particular crop is that they should be assured of fair share of the price paid by the consumer for their produce. In other words, the price received by the producers should reflect a substantial share of the retail prices. Organised processing and marketing are two essential activities for increasing net returns to producers. Most of the processing plants for pulses are located in the place far from the area of production. For instance many dal mills are located in Orai and other cities of Jalaun district, where about 50% share of the production is used for process pulses. and to make them more useful by adding more utility and made it more useful for many eatable things. Pulses are traditionally utilized for various product. After milling dal used for puffing or roasting into snacks food and grinding into flour for different types food are some of the primary process to which pulses are subject to part from consuming the whole or after cooking.

More than 75% of pulses, produced in the country are converted into dal, by wet or dry method, in about 10000 dal mills of varying capacities, scattered all over the country. Dal is prepared out of several pulses, notably bengal gram, arhar (Tur), black gram, green gram and lentil.

The traditional techniques of milling dal has several difficulties and limitations. A programme of modernization of this industry is urgently required to place this industry on a sound scientific footing, minimize the losses and improve the quality of products.

In conclusion it may be mentioned that the impact of the increased agricultural production will not be felt unless the processing losses are prevented by better processing techniques. About 10% increase in the availability of pulses can be achieved by preventing losses in the dal milling methods alone. In addition to the modernization of primary processing the popularization of technology diversified use of more knowledge pulses of regional importance can go a long way in our efforts to meet the country's food and protein requirement.

Every human being requires carbohydrate, protein and fat in his diet. for the proper growth and development. One of this major nutritional problems of world population depending upon plant food results in deficiency of quality protein, as cereals are very low in essential amino acids lysine. The deficiency of protein caused several diseases. This dietary deficiency is compensated to a large extent by pulses, which not only higher percentage but also rich quality of essential amino acids, pulses have power to satisfy required nutritional substance by paying low amount to get maximum amount of highly valuable food. For vulnerable sections of the society pulses are highly used as dal roti, dal-bhat and they use most of them in place of costly food items. The use of pulses is found in many parts of India in many ways.

Marketing is the crux of the whole food and agriculture problem. It would be useless to increase the output of food, it would be equally

futile to set up optimum standards of nutrition, unless means could be found to move food from the producer to the consumer at a price which represents a fair remuneration to the producer and is within the consumer's ability to pay¹.

Marketing is today the most dominant and prolific field to make big economic fortunes and for enhancement of production and productivity. The significance of efficient & effective marketing in agriculture is very well illustrated by saying, that "a good farmer has one eye on the plough and the other on the market". This is true when agriculture is mainly for subsistence, and now, even Indian agriculture is becoming commercialised due to green revolution. In these days of commercial agriculture, it will be more fit to say, "a good farmer has only his hands on the plough but both eyes on the market"².

Marketing plays an important role in determining the success and failure of any economy. In rural economy agricultural marketing is an important part of agricultural production process. Efforts to increase production may go waste unless the produce is marketed efficiently. It requires an efficient marketing system to carry the produce from the producer to ultimate consumer. Marketing channels describe the course followed through various chains of dealers and intermediaries who effectively influence the cost and price structure of the product and finally have important impact over the distribution of product and gain among producer and consumers,

The Directorate of Marketing and Inspection was established in 1935 in pursuance of the recommendations of the Royal commission 1926 and the Central Banking Enquiry Committee 1921. THE DMI published its first report on "Marketing of wheat in India" in the year 1937. The Directorate published nearly 150 commodity marketing reports with all India coverage and initiated many developmental activities in the field of standardisation

1. S. Mahalingam, Marketing committee of the U.N.O., Journal of Rural Development, Vol. 9(2) 1990 N.I.R.D. Hyderabad.

and grading, regulation of markets and market practices, promotion of cooperative marketing system, provision of warehousing facilities etc.

The agricultural production in India is said to be suffering from not getting due price for the product. The disparity between final price paid by the consumer and the initial price received by the farmer is considered to be large and in this process, the farmer appears to be a great loser, where as the middleman is the gainer, This problem of agricultural marketing was discussed at great length by the Royal Commission 1926 and has also been highlighted in various marketing reports published by the Marketing Advisor to the Govt. of India since 1937.

The difference in price paid by the consumer and the price received by the producer has been discussed in term of three different phenomena, The first relates to existing organisation of marketing structure of agricultural produce that include the system of quality control storage transportation and market information.

Traditionally most farm produce tend to be sold in village itself to village traders. The farmers often without information about the price prevailing in primary or terminal markets, are bound to sell at a much lower, price than warranted at prevailing terminal or primary market conditions, Even in primary market information under unregulated conditions has been inadequate or absent, Prices are negotiated under clothcover leading and dubious language leading to inadequate to producer-sellers about prevailing prices,

Another important factor considered responsible for the wide price difference between the semi-monopolistic or oligopolistic practice of traders in primary markets quoting lower price than justified by the prevailing terminal markets When it is done the absolute difference is considered much more than warranted by the necessary trading and transport cost. The regulated market system was designed to prevent this partly by putting restriction on commission agents and traders and more important way by cooperative marketing organisation. some times state Trading organisation also enter into market to compete with private traders.

One more important factor leading to wide price difference is attributed to excessive seasonal fluctuations in agricultural prices. It has often been stated that most farmer with poor stocking ability and

urgent need of cash sell their produce immediately after harvest. Once the post harvest marketing period is over the price in primary and terminal markets continues to rise, till next harvest time. The seasonal difference in the price is considered wider than reasonable carryover costs and the excess appropriated by the middlemen since the farmer has already sold their produce in the beginning of the post harvest period.

Marketing is a process aimed at satisfying the consumers need. There is not much difference in marketing practices in the case of pulses in various states. There are trends in the same market where other grains are marketed. The situation much resembles coarse grains (Jowar and Bajra) production and marketing problems. Producing of the both coarse grains and pulses is dependent on vagaries of monsoon they are largely grown in rainfed area rather than irrigated belts. It is worth noting that by and large.

The major pulse producing states are also the major coarse grains producing states. This is because generally grains and pulses grown are mixed crops. The government has from time to time been fixing minimum support prices for coarse grains too, But the demand for coarse grains is influenced by availability and price level of fine grains viz wheat and rice, But in the case of pulses which is competed by the availability of vegetables and other non-vegetarian items of protein, the relative stability in the production of pulses has to be sought with altogether different approach and outlook to fulfil suitably the growing national need for balanced nutrition.

Two basic elements of an agricultural system are production and marketing. The marketing of agricultural produce is as important as the production itself. As a link between producers and consumers, marketing plays a very important role not only in stimulating production and consumption but also in increasing the pace of economic development.

The system of marketing in India is saddled with a long chain of middlemen between the cultivator and the ultimate consumer. These middlemen take away the lion's share of the price paid by the consumers and consequently the seller gets a poor share of the price.

As the mandies and irregular markets are not subjected to any statutory control, the farmers have to pay various market charges long established by custom, These charges include taxes and tolls, commission,

brokerage, handling charges weight charges a changes for other services, quality allowance, weight allowance, temple allowance etc.

In unregulated markets the innocent farmers are invariably exploited by middlemen by their malpractices such as manipulation of weights and measurements, taking away samples without payment, negotiating the sale price under the cover of cloth and including dubious languages and notations. Some of the practices obtaining in the market amount nothing less than common theft.

Another defect of the present marketing system is that agricultural price of different varieties is not graded properly. These are inadequate arrangements for grading and standardiation of productions. The stagnant production level of pulses has led to rising prices. Because of their soaring prices pulses purely have become an item of luxury for the weaker sections of the society. But inspite of their high ruling prices in the market the pulse producers do not benefit much since the market intermediaries exploit both the producers as well as consumers. The producers thus get unduly lowshare of the consumers rupee. Thus the factor of marketing and processing of pulses behave as constraints to the objective of maximization of pulse production. The marketing of pulses, like other agricultural commodities plays a crucial role in the economic development of the country.

As sequeal to the technological revolution, better communications modernization of agricultural marketing pulses have assumed additional significance. Lack of transport facility and storage facilities, exploitation of middlemen and their malpracties, the high degree of illiteracy and ignorance of the farmers and increased demand for the pulses from urban population together have called for a rapid improvement in the existing marketing system.

An important requisite of a good system of agrilcultural marketing is the supply of accurate information regarding the present and possible future trend of prices in different markets to the producers. Conditions in India at present are unsatisfactory. The producer has to depend mostly on hear say and report furnished by trader -cum- money lender who would rarely give correct informateion. Market quotations furnished in the

news papers are not useful to the farmers as they are illiterate.

The present price situation has not made any significant impact on value productivity of the pulses. The prices of the whole that affect farmers income. Infact prices of whole pulses are not the attractive and the margin usually goes to the middlemen. The benefit of prices would go to the farmers if we streamline our marketing system of pulses. This may go a longway in increasing the value productivity of pulses and ultimately making pulses production more profitable and providing incentive to the farmers to bring more area under cultivation for these crops.

In India a very few studies on a comprehensive basis to depict the economics of production and morketing of pulses at the micro level. Hence such a type of study of the production level is of significance to show the direction and impact of green revolution on different pulse crops.

The present study relates to the production and marketing of pulse crop in Bundelkhand Region" with special reference to Jalaun District. It is an attempt at a correct appraisal of input and output relationship of different pulse crops processing costs per unit and producers share in consumers price of different crops. It will further help the policy makers to formulate Agricultural plan and policies on realistic basis and assess the input requirement and resource productivity with further assimilation of modern inputs..

The present investingation which is a pioneering effort for the area under study will bring new facts to light to assist the policy makers to developing realistic farm plans and programmes for the benefit of all farmers. It also aim at incresing the bounds of knowledge of the research workers and persons interested in the studies of the pulses and pulses marketing.

III REVIEW OF EXISTING LITERATURE

The study of marketing costs and margins assumes special significance in the economy. Where marketing improvement programme has been launched. Such studies are useful for both consumers and producers. The farmers

are interested in getting the highest price for the produce while the latter are interested in paying as low price as possible.

The prosperity of the cultivator and his progress efficiently depend upon marketing of their produce, Peter Drucker ~~which~~ commenting on the role of marketing & economic development observed that marketing is the most important multiplier of economic development and its advancement makes possible economic intergration and fullest utilisation of whatever assets and productive capacity of an economy possess.

The formulation of sound agricultural marketing programme augmenting agricultural production and agricultural policies depend on availability of critical data flowing from continuous research into the marketing system as a whole, methods employed within it and the various organisations using them. In fact it is a basic need of vital importance for administration and planners for faciliatating formulation and execution of suitable agricultural marketing policies and programmes. Various studies have been discussed to throw light the points of view emphasised.

Ranade (1982)¹ in his study conducted on pulse observe that there was a consensus that due to the examination and expansion in area under irrigation and operating of high yielding varities of wheat and paddy. The farmers have shifted away from pulses for the last 20 years, the area under pulses functioning between 18-22 Milli-on hectares without any noticable trend.

Chatta and Singh (1986)² reported that there were economic constraints which hinder the growth of pulses in Punjab. The growth of pulses over the period 1961-62 to 1971-72 and 1971-72 to 1981-82 was significantly negative. Risk is productively and price did not significantly affect the area under pulses. Strong price incentives are neccessary for immediate increase in the area under such crops.

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1. Randde C.C. (1982) "Slow growth crops pulses Oilseeds and Coarse Grains, India Journal of Agri. Economics.
 2. Chatta, I.S.Singh (1986) Production constraints on Pulses and Oilseeds in Punjab Economic Affairs"

Langer et.al (1987)³ studies on the direction of optimal fertilizer recommendations on farmers field. The methodology in two parts firstly using a multinutrients yield response functioning to analyse yield response to nutrients and secondly incorporating economic variable input output prices into mode to arrive at optimum level of fertilizer use.

Dantwala's⁴ study was probably the first systematic study of the structure of market organisation for an important commercial crop like cotton. His study besides describing the functioning of the cotton market examined the comparative character and efficiency of marketing operation in Berar (Khandesh) Dhulia, Karnatika middle Gujrat. Madras, Punjab and Sind Markets. No. specific Methodology was adopted by the author. The author collected detailed information of day-to-day movement of prices of different stages in the marketing for important month season for the year 1931-32.

Lele⁵ has also made a comprehensive study of the problems of marketing covering four states viz Punjab, West Bengal, Madras (Tamilnau) and Maharashtra and taking three crops viz wheat, padras and jowar. She made an attempt to examine the structure, behaviour, performance of the selected markets for food grains inspite of the limitation of availability of records with traders and the other problems in the collection of information from the markets and states.

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3. Lenger E.A. Paris William W.A. (1981) A non substitution dynamic mode for optimal fertilizer recommendation." Gianins foundation Monography, Uni of Calforria.
 4. M.L.Dantwala's, marketing of Raw cotton in India, Longmans Greanand Co. Bombay 1937.
 5. A.P.Kulkarni, The behaviour of price of groundnout pods in some regulated markets in Maharashtra Unpublished Ph.D. Thesis Univ. of poona.

Kulkarni⁶ in his study examined the working of regulated markets in relation to groundnut in Maharashtra. In regulated markets the level of the success of implementation of the act was found to be uneven in different regions.

A study by Chauhan and others⁷ is one of the few empirical studies of its kind which goes to the village level to examine the farmers' production and sale pattern of rapeseed mustard crop. This study was conducted in one of the most intensively rapeseed mustard growing areas i.e. Kheragarh Tehsil of Distt. Agra.

Cummings Jr's study⁸ also indicated that returns from holding wheat were consistent with storage costs plus a reasonable profit to the arhatiya (Commission agent for his services in the khanna market of Punjab for the period 1959-60 to 1963-64).

Sushila Srivastava and others⁹ indicated in their study that in the last two decades a large number of high yielding genotypes of pigeonpea have been developed and also it has found a place in new cropping systems. However, the increase in its production and productivity is only marginal. Considerably, this study was undertaken to analyse the trend in the growth of area, production and productivity of pigeonpea during the decade of 1978-79 to 1987-88.

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6. R.W. Cummings (Jr.) Pricing efficiency in the India wheat Market, Impex India New Delhi (1969)
 7. Uma. J. Lele, Working of grains market in selected India, 175-5-66 to 1965 usaid occasional paper no.12 Dept. of Ag Eco. Cornell Univ. Ithaca New York.
 8. K.K.S. Chauhan, P.V. Krishna, N.P. Singh, S.N. Mohanan, An Agrobusiness study of rapeseed mustard system. Monograph no.52 Centre for Management in Agriculture. I.I.M. Ahmedabad (1974).
 9. Sushila Srivastava, Brahma Prakash and D.K. Sharma (1990) "Analysis of Growth trends in "Area, Production and Productivity of Pigeonpea" India Journal of Pulses Research, Vol-3 No-1 July 1990, Pg 97-99. IIPR Kanpur.

In the study of G.D. parmar and others¹⁰, agricultural production in general has undergone a rapid change since green revolution in India, but in particular, the performance of pulses has not been so far. In spite of all the efforts, the national pulse production revolves only around 12.5 to 13.0 million tonnes. South Gujrat which contributes around 28.73% to state pulse production, the performance of pulses in some what promising specially during the decade of eighty. Therefore the study related to economic performance of the pulse crops in the comparison with other crops seem to be essential in the context to suggest some policy implications for raising the pulse production which is the urgent need to time.

In the study of G.P. Srivastava and other¹¹ examined lentil enjoy considerable importance in rice based cropping system in North and Central India after the harvest of long duration varieties of rice in late November and December as paira crop broadcasted in the Maturing rice crop. Its coverage yield is however low due to poor Management. The study was therefore, undertake to determine responses of lentil to various production inputs and identify the priority ones.

In the study of Brahm Prakash and others¹² Market arrivals and prices of Urd bean analysed with reference to state of U.P. The study was undertaken to analyse the inter and intra year variations in market arrivals and prices of Urd bean in all the regulated markets of Uttar Pradesh for the decade of (1983-84 to 1992-93). The positive coefficient of correlation (0.59) was observed between annual production and market arrivals. The annual variability in prices was more than the arrivals

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10. G.D. Parmar, K.A.Khunt, G.D. Naik & D.B.Desai, Economic performance of pulses in South Gujrat, Agricultural situation in India, Jan. 1994, Direc of Eco. & statistics D/o Agri & Co-op. Min of Agri, New Delhi Pg. 721-722
 11. G.P. Srivastava & V.C. Srivastava "Relative Contribution of Production Inputs" Indian Journal of Pulses Research 1980, July Vol. No-1, IIPR Kanpur Pg 73-74.
 12. Brahmprakash, Sushila Srivastava and S.Lal, "Market arrivals and prices of Urd bean in Uttar Pradesh" Indian Journal of pulses Research, June 1995, Vol.-8 No-1 page 56-61 IIPR Kanpur, U.P.

of urd bean. Inter year variations from 52.8 to 196% of total arrivals reached to the market during the period from October to January when prices were low, Inter year variations in wholesale market prices varied from 68.4 to 136.0% from the average annual prices prevailed during the last decade, while the intra year variations ranged between 96.7% and 104.8% farmers who sold their urd bean produce through regulated markets of the state got 177.4, 183.2, 167.6, 147.7, 168.7, 176.0, 170.2, 169.2, 158.4 and 134.1% more prices than the procurement prices during 1983-84 to 1992-93 respectively. The moderate degree of negative coefficient of correlation was observed between market arrivals and prices.

In the study of Y.S. Rathore and other¹³ examined a Micro level study on trends of production, market arrivals and prices of Mung bean in Etah distt. of (U.P.), The Inter year variations in production, market arrivals and prices of Mung bean in all the regulated markets of Etah distt. of U.P. for the last twelve years were analysed. Mung bean production which increased by 228.6% during 1985-86, declined by 46.7% in 1990-91 possibly due to increase in area in more remunerative crop like sunflower. The annual variability in prices was less as compared to that of arrivals of Mung bean. The percentage variation in the lowest and the highest index for annual market arrivals was 1448.4 in Gunjdundwara followed by 706.6 in kasganj and 396.5 in Etah markets, while price Index was maximum in Etah (233.5) followed by Kasganj (225.6) and Ganjdundwara (223.5) Farmers who sell their Mungbean produce through regulated markets got 247.2, 187.1, 162.0, 135 and 183.2% more price in comparison to procurement price during last five years. The negative co-efficient of correlation (-0.38) was observed between market arrivals and prices.

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13. Y.S.Rathore, JAY G.Varshney, Brahm prakash and S.Lal, A Micro level Study on Trends of Production, Market Arrivals and Prices of Mungbean in Etah distt. of U.P. Indian Journal of Rural Research Vol.-8, June, 1995, pg. 50-55, IIPR Kanpur.

In the study of Dr. N.D. Yadav & Dr. N.L. Vyas¹⁴ studied various aspects of Arid legumes in their book highlighted deeply on agroclimatic production technology and cropping system and regional disparity of legumes (namely Moth Bean, Cope, cluster bean and horsegram in arid and semi arid zones of India.

In the study of L.S. Jeswani and B.Baldev¹⁵ studied pulse production technology highlighting every aspect of production behaviour of pulses and tried to examine every pulse production technology at micro level with the view of scientific production and advanced technology.

So far as it in short to discuss various studies conducted about pulses production and marketing these studies represent various aspects and different regions of production area in our country.

14. Dr.N.D.Yadav & Dr. N.L. Vyas, Arid legumes, 1994 Agro, Botanical Pulishcers, Bikaner, India,

15. L.S. Jeswani, B.Baldev, Advanced in Pulse Production Technology, 1994, ICAR Publication, New Delhi.

III RESEARCH METHODOLOGYS

(A) HYPOTHESIS

This research study basically assumes that pulses have important place in the food basket of India, It is a very important item of Indian diet. In our daily food many people live on dal roti or dal bhat. They can not afford high prices for Luxirious item of their diet. Pulses have been used in many ways to increase taste of our food. On economic point of view farmer paid great care and engaged his resources to get maximum statisfaction by employing their resources and earn a great amount by selling it and satisfy all their cash neds. It is the best way to fed malnutritioned and unnutritioned half fed people to provide them full and nutirtions diet at cheap cost by enabling them to choose pulses in their diet.

Marketing is a crucial factor to effect production and decide farm activities by giving attractive price for their product. Systematic and organised market provideds better prices to farmers for their farm products, All middlemen engaged in marketing get their share, but the farmers share is reduced in this way. Peasants suffer many difficulties in traditional as well as in newly organised marketing system.

Mostly farmers have little holdings and they use their farm to produce food grain as well as pulses and oilseeds. Farmers are uneducated and have not specific qualifications to understand cost and revenue concept. They can not organise their activities according by calculating production cost, all carry over expenses and to understand comparative analysis among one crop to another crop, Farmers are not properly well acquainted with organised marketing system and market practice. Their urgent cash needs press them to sell their marketable surplus immediately after harvesting their crops and they are not in poposition to wait for higher prices, They have not skill to grade and standardise their products. Marketing is a vital need for selling of marketable surplus at reasonable prices. It needs proper and updated technology for improvement. The well organised marketing system for pulse crops, Marketing can play a great role in increasing productionand to attract farmers to grow pulses

in place of other crops and enjoy to getting proper price for their production. This is based on following hypothesis.

- (1) Price received for the marketed pulses are unstable and tend to be unprofitable.
- (2) No organised marketing channel or agencies are present at the village level which can reach at the farm gate.
- (3) Pulse farmers are responsive to price changes.
- (4) The share of the producer in the consumer's rupee can be increased by improving this money power and removing the malpractices which are being adopted at different regulated or unregulated markets.

(B) OBJECTIVES

This may go a long way in increasing the value productivity of pulses and ultimately making pulses more profitable and providing incentives to the farmers to bring more area under cultivation for these pulses and to get reasonable price for their pulse production which to be brought in the market as merketable surplus.

While major objectives of the study are to stress need-based planning to increase production, to give pulse for consumers at reasonable prices and to make the process attractive and profitable for all belonging persons. Specific objectives of the study are -

- (1) To assess the cost and return of major pulse crop.
- (2) To evaluate the level of earning on different size group holdings and various marketing channels.
- (3) To analyse the optium use of various production oriented inputs to maximise the pulse production.
- (4) To identify different marketing channels of pulse crops.
- (5) To examine effectiveness of marketing system in protecting interest of farmers and consumers.
- (6) To understand shortcomings in the existing marketing structure and find out alternative strategies for increasing producers' share.

- (7) To measure the impact of efficient marketing system on pulse production in the district.

COLLECTION AND ANALYSIS OF DATA

Jalaun is a one of the district of Bundelkhand Region, Jalaun district has 8 Tehsils and 9 Blocks. Jalaun is a lentil growing district. This district produces all pulses among pulse crops.

The study is based on primary as well as secondary data and information while ample use of existing literature and reports on the functions of existing pattern of pulse productions marketing structure will be made. A first hand information will also be collected through field work personal contact with farmers, middlemen and officials of government and semi government bodies engaged in the field of production & marketing of pulses. Out of 4 Tehsils, Orai, Tehsil selected for the purpose & Dakor block chosen for factual and statistical data.

Out of all 7 mandies & 4 sub mandies, 3 mandies to be selected as one main mandi orai, & two sub mandi Ait & Konch from the district for factual studies.

Large, middle and small farmers to be chosen as large, medium & small land holders to get information for the study purpose and among all pulse crop few crops to be chosen as a representative of rabi & Kharif crop- Because summer cultivation practice is not very popular. It is left out summer pulse crops. Out of the gram, Pea, Mungbean lentil, Urd bean and pigeonpea have been selected for the study. All the relevant information will be collected at grass-root level as village farmers and also by means of published literature, reports and other production study mostly based on secondary data but it also summing up researchers original work to understand and compare to the real phase and to analyse field level inquiry about economic views. mainly this study as a great attempt to understand marketing level studies of pulse crop in the study area. The information so collected by various means will be properly analysed with the aid of latest analytical technique & statistical tools to arrive at the conclusions.



Chapter - 2

Chapter-2

BUNDELKHAND REGION

The Bundelkhand region comprises seven districts namely Jhansi, Lalitpur, Jalaun, Hamipur and Banda. Two more district Mahoba and Shahu Ji Maharaj nagar have been newly created. The region, is located between 24° and $26^{\circ} 30'N$ Latitude and $78^{\circ} 11'$ and $81^{\circ} 40'E$ Longitude. It is bounded by the river Yamuna in the North and escaped by ranges of the Vindhyan plateau in the South. It is surrounded on three sides by Madhya Pradesh. The total area of the region is about 29418sq.km. with a human population of about 673 million as per 1991 census, About 78.66% population lives in the villages out of which 37.87% is directly related with agriculture.

Jhansi district has total area of 5024sq. km with 4 Tehsile and 8 Blocks, Lalitpur has total area of 5039 sq. km. with 3 tehsils and 6 blocks, Jalaun has total area of 4565sq.km with 4 Tehsils and 9 Blocks. Hamirpur has total area of 7166sq.km. with 7 Tehsils and 11 Blocks and Banda has total area of 7624 sq. Km. 6 Tehsils and 13 Blocks. So Bundelkhand has total geographical area of 29418sqm km with 23 Tehsils and 47 communitydevelopment Blocks. Out of 840 villages 750 villages are populated and 77 villages are nonpopulated and 14 urban places in Jhansi distt, out of 754 village 689 villages are populated and 65 villages are non pupulated and 4 Urban places, out of 1151 villages 942 villages are populated and 209 villages are unpopulated and 10 Urban places in Jalaun distt, out of 1147 villages 926 villages are populated 221 villages are non populated and 12 Urban places in Hamirput distt, out of 1344 villages 120 villages are populated 138 villages are nonpopulated and 11 Urban places in banda distt. In this way out of total 6237 village 4521 villages are populated and 710 villages non populated, 6 forest villages and 51 urban places are in Bundelkhand region.

POPULATION

Bundelkhand region has total population 6729748 with a density of

229 person sq. km. Out of this Jhansi distt has total population 1430000 with density of 285 person per sq. km. Jalaun has total population 1219000 with density of 267 person per sqm. km. Lalitpur has total population 752000 with density of 149 person per sq. km Hamirpur has total population 1466000 with density of 205 person er sq. km. and Banda has total population 1219000 with density of 267 person per sqm. km. Urban population was in Jhansi 40%, Lalitpur 14%, Jalaun 22%, Hamirpur 17% and Banda 13%. Decadal Increase observed as follow, Jhansi 25.7%, lalitpur 30.3%, Jalaun 23.6%, Hamirpur 22.8% and Banda 21.4%. The share of SC/ST population is 28.89% in Jhansi 26.1% in lalitpur 27.3% in jalaun 24.9% in Hamirpur and 23% in Banda distt. The availability of females for per thousand males was as follows 863 in Jhansi & Lalitpur 829 in Jalaun 841 in Hamirpur and Banda and average size of family consists of 6 members in the Bundelkhand region with density of 229 person per sq. km. Bundelkhand has 4.3% of state population.

Demographical figures can be presented in this way. Jhansi distt. has 983000 rural population 411975. Totl SC/ST population out of this 277343 rural SC/ST population. Jalaun distt. has total 9500000 rural population. Total SC/ST population 33472 out of this rural SC/ST population 274178. Lalitpur has total rural population 646000 total SC/ST population 189276 and total rural SC/ST population 174197. Hamirpur has total rural population 1212000 out of which total rural population 365050 out of rural SC/ST population 311824 and Banda has total rural population 162300 rural SC/ST population 432927 and total rural SC/ST population 392795.

Total main worker are related to total population in a following way 32% in rural and 26.1% in urban and total 30.1% in Jhansi. 33.7% in rural 26.5% in Urban and total 32.7% in distt. Lalitpur. 30.7% in rural 25.9% in urban and total 29.6% in Jalaun distt. 28.4% in rural 27% urban and total 33.31% in Hamirpur distt. 37.2% in rural 28.0% in urban and total 36.0% in Banda Distt.

The share of agricultural worker, Agricultural Labours was in a following way 18.7% Ag. workers and 4.7% Ag. labourers in Jhansi distt. 26.5% Ag. workers and 3.4% Ag. labourers in Lalitpur distt. 23.2% Ag. workers and 6.0% Ag. labourers in Jalaun distt. 27.2% Ag. workers and 10.3% Ag. labourer in Hamirpur distt. 30.9% Ag workers and 9.5% Ag.

labourers in Banda distt the share of population engaged in animal husbandary and forestry activies is very less and varies upto in the regions the share of Household and non house hold industries upto 1 to 5% in the region 0.7% to 2.0% population are engaged in construction functioning 0.9% to 7.0% population found engaged in trade, Transport storage and commucation activities and about to 5.0% to 12.3% were engage in other activies which are not classified in following groups.

AGRICULTURE

Bundelkhand is a backward region and based on agricultural economy. Agriculture is a means of bread and butter to the inhabitants. In rural area agriculture is a family business. It is a supporting base to cater all types of needs in rural family. It also provides employment to a greater part of our work-force. It provides employment directly and indirectly as farmers agricultural labourers rural atrisans, mandi based workers and in other allied services as animal husbandry. Agriculture is based on monsoon in this region. If it rains timely it gives joy to many farmers family, but sometimes when it does not rain timely it cause pitiful situation farmers and other agricultural workers, It also provides food grain to cater needs of urban population. It depends on Gods grace and nature's mercy. But now scientific methods of farming and greater uses of applied technology will enhance our agricultural production and marriment to rural dwellers and agricultural work force.

TABLE 2.6

TYPES OF LAND IN BKD REGION (IN HECTARE)

<i>Land type</i>	<i>Jhansi</i>	<i>Lalitpur</i>	<i>Jalaun</i>	<i>Hamirpu</i>	<i>Banda</i>	<i>BKD Region</i>
<i>Raker</i>	45.58	90.79	48.28	36.40	98.79	319.84
<i>Kabar</i>	60.77	2.98	60.80	33.41	67.41	225.26
<i>Padua</i>	151.94	57.35	119.10	201.25	168.87	698.51
<i>Mar</i>	45.58	21.21	118.09	230.05	155.48	570.41
<i>Other</i>	14.63	23.87	0.33	14.99	17.46	71.28
Total	318.50	196.20	346.60	516.10	507.90	1885.30

Soil clasification revealed in this table to show factual figures. Rakar type of land is found 319.84 in hectares but of this 45.58th hectares is in Jhansi., 90.79. Hect. in Lalitpur, 48.28 th. heacare in jalaun, 36.40 th. Hect in Hamirpur and 98.78 Hect in Banda distt. Kabar is found 225.26 hectares out of this 60.77 to hect as in Jhansi, 2.98 th. Hect in Lalitpur, 60.80 th hect in Jalaun, 33.41 hect in Hamirpur and 67.30 in Banda distt. Padua land is found 698.51th Hect. Out of this 151.54th hectares in Jhansi, 57.35th Hect in Lalitpur, 119.10th Hect in Jalaun, 201.25th hect in Hamirpur and 68.87th hect. in Banda distt.. Mar found in 570.41th Hect. out of this 45.58th Hect in Jhansi, 21.21th. Hect in Lalitpur, 118.09th. Hect in Jalaun, 230.05th Hect in Hamirpur and 155.48th Hect. in Banda distt.. Other types of land found in 71.28th Hect. in the region out of this 14.63th hect. in Jhansi, 23.87th Hect. in Lalitpur, 0.33th hect. in Jalaun, 14.99th hect. in Hamirpur and 17.46th hact in Banda distt.. Out of total geographical area Bundelkhand region has 1885.30th hect land out of this 319.84th hect is Rakar 225.26th hect. is kabar 698.51th. Hect is padua, 570. 41Hect is Mar, and remaining 71.28th Hect is Mar, and remaining 71.28th Hect is othertype of land.

TABLE 2.7

Distt wise no. of total marginal and small Holdings 1990-91 and Agricultural Labourers census 1991. (Thousand)

Distt	All holding group	Marginal (below 1.0 hect	Smallholding 1 to 2 hect	Agricultural tural labourer
Jhansi	193	98	51	67
Lalitpur	128	45	49	25
Jalaun	211	107	47	83
Hamirpur	286	133	68	151
Banda	351	206	75	177
BKD	1169	587	290	503

Table 2.7 presents about total, marginal, small holdings and no of agricultural labourers in the region. There are 193 thousand all holdings in Jhansi. Out of this 96 thousand are marginal and 51 thousand small holding. There are 128 thousand All holdings in lalitpur distt out of this 45 thousand are small and 49 thousand are marginal holdings there are 211 thousand holdings in jalaun distt out of this 107 thousand are small and 47 thousand are marginal holdings. There are 286 thousand all holdings in hamirpur distt of 133 thousand are small and 68 thousand are marginal holdings. There are 351 thousand all holdings in Banda distt out of this 206 thousand are small and 75 thousand are marginal holdings. In this way 1169 thousand total holding in Bundelkhand region out of this 587 thousand are marginal and 290 thousand are small holdings and there are 67 thousand ag. labour in Jhansi distt. 25 thousand ag. labourers in lalitpur distt, 83 thousand in Jalaun Distt. 151, thousand in Hamirpur distt and 177 thousand ag. labourer in Banda distt. In this way 503 thousand agricultural labouers are in Bundelkhand region.

Table 2.8 show total reporting area, area under forests, usar barren and uncultivable land in the region. There are 502757 hect. reporting area in Jhansi, 456213 hect total reporting in jalaun distt, 717340 hect total reporting area in Hamirpur distt. 780814 hect. reporting area in Banda distt and 504149 hect reporting area in lalitpur distt.

In this way Bundelkhand region has 2961273 hect. total reporting area. There are 32778 hect. area was under forest in Jhansi 25701 hect. in Jalaun distt, 38088 hect. in Hamirpur distt, 77782 hect. in Banda and 72233 hect in Lalitpur distt. in the year 1992-93 there area under forest was 37773 hect. in Jhansi distt., 25701 in Jalaun, 39154 hect. in Hamirpur, 77781 hect. in Banda distt in the year 1993-94. There area user and barren land 31601 hact in Jhansi distt, 13622 hect. in Banda distt, in the year 1992-93 and 31647 hectare in Jhansi 13613 hect. in Jalaun distt, 21573 in Hamirpur distt., 36831 hect. in Banda distt, and 17611 in Lalitpur distt in the year 1993-94 The uncultivable areas was 47251 hect. in Jhansi distt., 8498 hect. in Jalaun,

23549 hect. in Hamirpur, 32249 hect. in Banda, and 101178 hect. in Lalitpur distt in the year 1992-93, and 39409 hectare in Jhansi, 5750 hect, in Jalaun, 227,43 hectare in Hamirpur, 31831 hect. in Banda, and 101680 hect. in Lalitpur distt. in the year 1993-94 the area affected by rains was 9421 hect in Hamirpur distt., in the year 1992-93 and 2152642 hect. in 1993-94 Usar and barren land was 121135 Hect. in 1992-93 and 121275 hectare in the year 1993-94 the uncultivable land was 217725 hect. in the year 1992-93 and 201393 hect. was in the year 1993-94.

TABLE 2.9

District wise Gross and Net Cultivable Area Net Irrigated Area and its Percentage 1992-93 (Th. Hectare)

Distt.	<u>Cultivated Area</u>		<u>Irrigated Area</u>		% of Irrigated area to cultivated area	
	Gross	Nett	Gross	Net	Gross	Net
Jhansi	366	314	133	131	36.3	41.7
Jalaun	385	348	136	134	15.4	38.5
Hamirpur	561	123	161	157	28.7	30.0
Banda	602	507	188	120	31.2	27.6
Lalitpur	284	226	131	129	46.2	57.4
Total	2198	1918	749	691	34.0	36.0

Table 2.9 presents cultivated area, irrigated area and its percentage to cultivated area in the region. Cultivated area was 366th hectrate in Jhansi distt. Out of this 364th. hect was net cultivated area, 133 thousand hect. was irrigated area, 131 thousand hectare was net irrigated area. It was 36.3% to gross cultivated area and 41.7% to net cultivated area in the year 1992-93. It was 385th hect. cultivated area in Jalaun distt, Out of this 348th hect. was not cultivated area, 136, thousand hect was irrigated area. Out of this 134 thousand hect. was net irrigated area and its percentage was 35.4% to gross cultivated area and 38.5%

to net cultivated area. It was 561 th. hect cultivated area in Hamirpur distt. Out of this 523 thousand hect. was net cultivated area 161 thousand was irrigated area, and of this 157th. hect. was net irrigated area. It was 28.7% to gross cultivated area and 30% to net cultivated area. It was 602th. hect. cultivated area in Banda distt. Out of this 507 th. hect. was net cultivated area, 188th. hect. was irrigated area. Out of this 120th. hect was net irrigated area its was 31.2% to gross cultivated area and 27.6% to net cultivated area. It was 284th hect. cultivated area in Lalitpur distt. Out of this 226th. hect. was not cultivated area, 131th. hect was irrigated area. Out of this 129th. hect was net irrigated area. Its percentage was 46.2% to gross cultivated area and 57.4% to net cultivated area in 1992-93.

Table 2.10 1993-94
**District Wise Cultivated Area, Irrigated Area and Percentage of
Irrigated Area to Cultivated Area**

Distt.	<u>Cultivated Area</u>		<u>Irrigated Area</u>		% of Irrigated area to cultivated area	
	Gross	Nett	Gross	Net	Gross	Net
Jhansi	361	326	145	145	149.2	43.9
Jalaun	390	353	153	150	39.2	43.5
Hamirpur	558	519	172	169	30.8	29.6
Banda	587	504	185	144	31.5	28.6
Lalitpur	285	227	128	126	44.9	55.5
Total	2181	1929	783	732	36.0	38.0

Source - Statistical diary 1994 (page 124-125)

Statistical diary 1995

Table 2.10 presents, Cultivated area was 361 th hect. in Jhansi distt. Out of this 326th. hect was net cultivated area 145th. hect is irrigated area out of this 143th hect was not irrigated area. It was 40.2% and 43.9% to gross cultivated and net cultivated area. It was 390th hect. cultivated area in jalaun distt out of this 353th hect was

net cultivated area 153th hect. was irrigated area. Out of this 150th hect was net irrigated area, it was 39.2 and 42.5% of gross cultivated area and net cultivated area. It was 558th. hect, cultivated area in Hamirpur distt. Out of this 519th hect was net cultivated area, 172th hect was irrigated area out of this 169th hect was net irrigated area, It was 30.8% and 32.6% of gross cultivated area and net cultivated area respectively. It was 587th hect. cultivated area in Banda distt. Out of this 504th. hect was not cultivated area, 185th hect was irrigated area. Out of this 144th hect was net irrigated area. It was 31.5% and 28.6% of gross and net cultivated area respectively. It was 286th hect. cultivated area in Lalitpur distt. Out of this 227th. hect was net cultivated area, 128th. hect. was irrigated area. Out of this 126th. hect. was net irrigated area, it was 44.9% and 55.5% of gross and net cultivated area respectively. It was 2181th. hect. cultivated area in the region. Out of this 1929th hect. was net cultivated area. 783th. hect was irrigated area. Out of this 73 th. hect was net irrigated area. It was 36.0% and 38.9% of gross and net cultivated area respectively

TABLE 2.11

Distt. wise net irrigated area and sourcewise irrigated area in the region 1992-93 *Hundred hect.*

<i>Distt.</i>	<i>Nett Canal irrigated area</i>	<i>Govt.</i>	<i>Private tubewell</i>	<i>Other tubewells</i>	<i>source</i>
<i>Jhansi</i>	1309	712	19	27	551
<i>Jalaun</i>	1340	1102	125	59	54
<i>Hamirpur</i>	1571	814	124	105	528
<i>Banda</i>	1397	967	91	114	225
<i>Lalitpur</i>	1295	533	-	6	756
<i>BKD</i>	6912	4128	359	311	2114

Table 2.11 shows about net irrigated area and source wise irrigated area in the region. It was 1309 hundred hect. net irrigated area in the Jhansi distt. out of this 712 hundred hect. In irrigated by canals, 19 hundred hectare by Govt. tubewells, 27 hundred hectare by pvt. tube wells and 551 hundred hectare by other sources in 1992-93. It was 1340 hundred hectare net irrigated area in Jalaun. Out of this 1102 hundred hectare by canals, 125th hectare by Govt. tube wells, 59 in hectare by Pvt. tubewells and 54.th hectare by other sources. It was 157th. hectare net irrigated area in Hamirpur distt, out of this 814th hect. by canals 124th. hectare by govt. tubewells, 105th. hect by Pvt. tube wells and 558 th hect. by other sources in 1992-93. It was 1397 th. hect. net irrigated area in Banda distt., out of this 967th. hect by canals, 91th. hect by other sources in 1992-93. It was 1295th. hect in net irrigate area lalitpur distt. out of this 533 th. hect. by canals 6th hect. by Pvt. tube wells and 756th. hect by canals 6th by Pvt. tube wells and 756th. hect. by other sources in 1992-93. It was 6912th.hect net irrigated area in BKD region, out of this 4128 th hect. by canals, 359th. hect by govt tubewells. 311th hect by Pvt. tubewells and 2114th hect by other sources in 1992-93.

Table 2.12

1993-94

Distt.	Nett irrigated area	Canal	Govt. tubewell	Private tubewells	Other source
Jhansi	1428	974	22	31	580
Jalaun	1497	1211	140	73	73
Hamirpur	1689	905	151	99	534
Banda	1438	969	120	109	241
Lalitpur	1260	496	-	9	755
BKD	7312	4375	433	321	2183

Source - statistical Diary (U.P.) 1994
statistical Diary (U.P.) 1995

Table 2.12 presents, It ws 1428th. hect. net irrigated area in Jhansi distt. out of this 974th hect by canals 22th hect by Govt. tube wells 31th sect by Pvt. tubewells and 580th. hect. by other sources in 1993-94. It was 1497 th. hect net irrigated area in jalaun distt. out of this 1211 h. hect by canals, 140h. hect by Govt. tubewells, 73h. hect by Pvt. tubewells and 73h. hect by other sources in 1993-94. It was 1689th. hect net irrigated area in Hamirpur distt. oit of this 905th. hectare by canals, 151th. hect by Govt. tubewells, 99th hect by Pvt. tubewells and 534th. hect by other sources in 1993-94. It was 1438th hect net irrigated area in banda distt., out of this 969th hect by Govt. tube wells and 241th hect. by other sources in 1993-94. It was 1260th. hect net irrigated area in lalitpur distt. out of this 496 th. hect by canals. 9 h. hect by Pvt. tubewells and 755 th. hect by other sources in 1993-94. It was 7312th. hect. net irrigated area in Bundelkhand region out of this 4375 th. hect by canals 433th. hectare by govt. tubewells 321th. hect Pvt. tubewells and 2183th. hect by other sources in 1993-94.

TABLE 2.13

Distt. wise underground water resources in BKD region.

AS on 31.3.93 & 31.3.94.

Distt	As on 31.3.93			As on 31.3.94		
	Net revocerable recharge	Net Draft	%of ground water utilization	Net revocerable recharge	Net Draft	%of ground water utilization
Jhansi	519	152	29.3	670	158	23.3
Jalaun	747	116	15.5	383	114	13.3
Hamirpur	837	161	19.2	838	172	20.5
Banda	997	196	19.7	989	2.6	21.2
Lalitpur	419	192	45.8	427	192	45.2
BKD	3519	817	23.2	3307	843	25.5

Source Stat. Diary U.P. 1994 & 1995

Table 2.13 presents figures about net recoverable recharge of water 519 m. cm. in Jhansi, 747 MCM in Jalaun, 837 MCM in Hamirpur, 997 MCM in Banda, 419 MCM in Lalitpur distt., as on 31.3.93. Net draft of water was 152 MCM in Jhansi, 116 MCM in Jalaun, 161 MCM in Hamirpur, 196 MCM in Banda and 192 MCM in Lalitpur distt as

on 31.3.93. In Jhansi distt, 15.5% in Jalaun distt, 19.2% in Hamirpur distt, 19.7% in Banda distt, and 45.8% in Lalitpur distt, as on 31.3.93. Net recoverable recharge, net draft and percentage of ground water was 3519 MCM, 817 MCM and 23.2% respectively as on 31.3.93 in Bundelkhand region.

The net recoverable recharge of water and net draft was 670 MCM and 158 MCM respectively in Jhansi distt. and percentage of ground water utilization was 23.3% as on 31.3.94. The net recoverable recharge of water and net draft was 383 MCM and 114 MCM respectively in Jalaun distt and percentage of ground water was 13.3% as on 31.3.94. The net recoverable on charge and net draft was 838 MCM and 172 MCM respect in and 20.5% was ground water utilization in Hamirpur distt. The net recoverable recharge and net draft was 989 MCM and 206 MCM respectively in Banda distt. and 21.2% ground water utilization was in this distt as on 31.3.94. The net recoverable recharge and net draft was 427 MCM and 193 MCM respectively in lalitpur distt and 45.2% ground water utilization in this distt as on 31.3.94. The net recoverable recharge and net draft was 3307 MCM and 843 MCM respectively in BKD region and 25.5% ground water utilization was as on 31.3.94 in this region.

TABLE 2.14

Area, productions, productivity of main crop groups in BKD region in 1993-94.

Crop group	Area (Hect)	Production M.Ton	Productivity (hect.)
Total K.Grains	323643	273000	8.44
Total K.Pulses	85308	24632	2.89
Total K.Foodgrain	408951	297632	7.28
Total R.Grains	649877	1146272	17.64
Total R.Food grains	1565988	1974144	12.60
Total grains	973520	1419272	14.57
Total pulses	1001419	852504	8.51
Total fodd grains	1974939	2271776	11.50

Source :- Ag figures in U.P. 1993-94

Director, Ag. stats crop Ins. LKO (U.P.)

Table 2.14 presents that total kharif grains grown in 323643 hect. produced 27300 m. Ton at the rate of 8.44 q/hect. Total kharif pulses grown in 85308 hect. produced 2463M Ton at the rate of 2.89 q/hect. Total kharif food grains grown in 408951 hectare, produced 257632 M.Ton at the rate of 7.28q/hect. Total Rabi grains grown in 649877 hect. produced 1146272M Ton at the rate of 17.64 g/h. Total Rabi pulses grown in 916111 hect., produces 827872 M ton at the rate of 9.04 q/hect. Total Rabi food grain grown in 15659988 hectare, produces 1974144M Ton at the rate of 12.60 q/hect. Total grain grown in 973520 hect. produced 1419272 M.Ton at the rate of 14.57 q/hect Total pulses grown in 1001419 hectare produced 852504 M.Ton at the rate to 8.51 q/hect. Total foodgrains grown in 1974939 hectare produced 2271776 M.Ton at the rate of 11.50 q/hect in the year of 1993-94.

INDUSTRY TRADE & COMMERCE

Industry and agriculture cater needs of each other. If we ignore any one of them, we have not find any clear cut solution. Industry is a second largest job providing sector to our working population. Industry has suggest many inprovement as labour saving and time saving devices to help production technique of agricultural commodities. It also improve value and alternative many uses of agroproduct. Industry provides many equipment to improve production technology and newly advanced scientic production system of farming. By using new method, we have surpulus working people and we can provide employment them in these industries. Industry is also indicator of development. Both Industry and agriculture are interlinked activities both are related to each other. We can see few facets of industry and enterprises in the region in this section of the chapter.

TABLE 2.15

Distribution of all Enterprises (Rural and Urban) in BKD region 1990

Distt.	No. of enterprises			persons usually working in Enterprises			
	Total	Agrict.	NonAg.	Establishment	Own Accom	Total	Hired
Jalaun	25010	571	24439	6449	18561	54079	25902
Jhansi	32968	843	32125	7912	25056	97308	52784
Lalitpur	14974	247	14727	3853	11121	27803	12042
Hamirpur	32847	1166	31681	6148	26699	61486	22871
Banda	25804	749	25055	5380	20424	51438	20393

Source statistical Diary U.P. 1995.

Table 2.15 present that there are total enterprises 25010 out of 571 agricultural and 24439 non agricultural in otherway 6449 establishment and 18561 owned individually having total 54079 worker out of 25902 hired woker in Jalaun distt. There are total enterprises 32968 enterprises out of 843 agricultural and 32125 nonagricultural in other way 7912 establishment and 25056 onwned individually having total wokrer 97308 out of 52784 hired worker in Jhansi distt. There are total enterprises 14974 out of 247 agricultural 147227 non agricultural in otherway 3853 establishment and 11121 owned individually having 27803 worker out of 12042 hired worker our of this 12042 hired worker in lalitpur distt. There are 32847 enterprises out of 1166 agricultural and 31681 non agricultural in other way 6148 establishment and 26699 owned individually having total worker 61486 out of 22871 hired worker in Hamirpur distt. There are 25804 total enterprises out of 749 agricultural and 25055 non agricultural in other way 5380 establishment and 20424 owned individually having 51438 total worker out of 20393 hired worker in Banda distt in 1990.

TABLE 2.16

Distt. wise Industrial Estate in Bundelkhand Region-

<i>Distt</i>	<i>No. of Ind Est.</i>	<i>No. of Allo- ted</i>	<i>of plot Wor- king</i>	<i>No. of Allo- ted</i>	<i>of plot Wor- king</i>	<i>Emple- yed</i>	<i>Production in Rs. (Th.)</i>
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Year 1990-91

<i>Jhansi</i>	2	18	18	64	18	260	480
<i>Lalitpur</i>	2	18	7	78	21	138	9500
<i>Jalaun</i>	3	12	7	74	17	122	9878
<i>Hamipur</i>	1	8	8	9	8	100	2500
<i>Banda</i>	1	8	6	14	9	68	40
<i>Division</i>	9	64	46	239	73	688	22398

<i>Distt.</i>	<i>No. of Ind. ext</i>	<i>No. of sheds Alloted</i>	<i>Working</i>	<i>No. of plots Alloted</i>	<i>working</i>	<i>Employees person</i>	<i>Producti on in Rs.</i>
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Year 199-92

<i>Jhansi</i>	2	18	18	66	14	300	500
<i>Lalitpur</i>	4	18	8	78	21	138	9500
<i>Jalaun</i>	3	12	4	74	16	122	9878
<i>Hamirpur</i>	1	8	8	12	8	100	2600
<i>Banda</i>	1	7	5	14	9	70	110

<i>Division</i>	11	63	43	244	68	730	22588
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Year 199-92

<i>Jhansi</i>	4	18	18	67	17	322	580
<i>Lalitpur</i>	4	18	12	89	30	169	10600
<i>Jalaun</i>	4	8	5	65	28	135	12792
<i>Hamirpur</i>	1	8	8	12	8	100	2550
<i>Banda</i>	1	6	5	14	9	73	100

<i>Division</i>	14	58	48	247	92	799	26622
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Source :- statistical Magazine 1993

Jhansi Division

Table 2.16 presents that Jhansi distt has 2 industrial estate, 18 allotec & working sheds 64 allotted and 18 working plot employed 260 person and produced Rs. 480000 valued products. Lalitpur distt has 2 industrial estate, no of allotted and 18 working plot employed 260 person and produced Rs. 480000 valued products, Lalitpur distt has 2 industrial estate no of allotted pheses 18 and working sheds 7 allotted plots 78 and working 21 employing 138 person and produces productionhaving value of Rs. 9500000 in moneyterm. Jalaun dist has 3 industrial estates, allotted and workingshes 12 and 7 respectively on of plot 74 allotted 17 plots were in working employed 122 person and produced Rs. 9878000 valued goods. Hamirpur and Banda distt has 1 industrial estate allotted and working shed 8 in Hamipur distt, no of allotted and working plots 9 and 8 respectively employed 100 person & produced goods having Rs. 2500000 money value.

Distt Banda has allotes sheds 8 and working sheds 6 and, no plots 14 and 9 working sheds employing 68 persons, produced good having value of Rs. 40000 in money term in the year 1990-91. Jhansi distt has 2 industrial estates 18 shes out of 8 workings sheds, 66 allotted plots out of 14 working plots employed 300 person and produced goods having value Rs. 9878000 in money term. Jalaun distt has 4 industrial estate allotted sheds 12 out of 4 working sheds 74 allotted sheds out of 16 working plots employed 122 persons produced goods having value Rs. 9878000 in money term. Hamirpur and banda has 1 industrial estate in each distt. Alloted and working shed 8 allotes plots 12 of 8 workiing plots employing 100 persons produced goods having value 2600000 in money term in distt. In bands, 7 Alloted sheds out 5 working shed 14 allotted plots out os 9 working plots, employed 70 person and produces goods having value Rs. 110000 in money term in the year 1991-92.

Jhansi distt has in industrial estate 18 allotted & working sheds, 67 allotted plots out of 17 working plots employed 322 persons produced goods having value of Rs. 580000 in money term. Lalitpur distt has 4 industrial estate, 18 allotted shes out of 12 working shes 89 allotted plots out of 30 working plots employed 322 person to produce goods having Rs. 10600000 in money term Jalaun distt has 4 industrial estate 8 allotted sheds out of 5 working sheds 65 allotted plots out of 28 working plots employed 135 person to producing goods having value Rs. 12792000 in money terms Hamirpur and Banda distt has 1 industrial estate in each distt 8 allotted and working sheds 12 allotted plots out of & working plots employed 100 person to producing good having value Rs. 2550000 in money term Banda distt has 6 allotted sheds out of working.

INFRASTRUCTURE

Transport, Communication, Power, Financial Institutions

Infrastructural development is a best indicator to measure economic development in any region. Infrastructure provides basic requirement it is a prerequisite to progress in every sphere and it can be observed in many parts of our country, where abundant facilities covering under infrastructure, there is a progress and prosperous life in the region but unfortunately we have lacking in this region so here are life in a darkness and far away from ray of development. It can be access in a following way.

TABLE 2.17

Length Of Disttwise Metaled Roads In The Region

<i>Distt</i>	<i>Total Roads in km</i>	<i>Roads under P.W.D. (in km)</i>
1998-90		
Jhansi	1178	950
Lalitpur	758	666
Jalaun	1024	872
Hamirpur	1187	1029
Banda	1324	1237
BKD	5471	4804
1990-91		
Jhansi	1192	964
Lalitpur	797	705
Jalaun	1098	1000
Hamirpur	1217	1108
Banda	1324	1244
BKD	5628	5021
1991-92		
Jhansi	1210	982
Lalitpur	838	746
Jalaun	1129	1031
Hamirpur	1265	1155
Banda	1334	1257
BKD	5786	5171

Source :- Statistical Diary Jhansi Divn. 1993.

Table 2.17 present that length of total metaled roads was 1178 and roads under P.W.D. was 950 km in Jhansi distt Total length of metaled road 758km and metaleds roads under P.W.D. was 666 kmin Lalitpur distt. Length of total metaled raods was 1024 km and roads under P.W.D. was 872 km in Jalaun distt. The length of total metaled roads was 1187 km. and unders P.W.D. was 1029 km. in Hamirpur distt. The length of M.Roads was 1324 km. and roads under P.W.D. was 1237 km. in Banda distt. In this way M.Roads was 5471 km. and rads under P.W.D. was 4804 km. in 1989-90 in the region.

Total metaled roads length was 1192 km. in Jhansi distt. 797 km. in Lalitpur, 1098 km. in Jalaun distt 1217 km. in Hamirpur distt and 1324 km. in Banda distt and road under P.W.D. was 964 km. in Jhansi distt 705 km in Lalitpur distt, 1000 km. in Jalaun distt. 1244 km. in Bands distt.. In this way total metaled roads & roads under P.W.D. was 5628 km and 5021 km. in the region In 1990-91.

Total metaled roads was 1210 km. in Jhansi distt. 838 km. in Lalitpur distt. 1129 km. in Jalaun, distt 1265 km. in Hamirput distt. 1334 km. in Banda, Distt. Roads under PWD was 982 Km in Jhansi District 746 Km. in Lalitpur distt. 1031 km. in Jalaun distt, 1155 km. in Hamirpur distt and 1257 km. in Banda distt.

In this way 5786 km. total metaled roads and 5171 km. roads was under P.W.D. in the region in the year 1991-92 Length of P.W.D. metaled roads asper lac of population was 83.31 km. in 1992 in 1992-93 and 85.25 km. in 1993-94. If was length of metaled roads as per thousand of km. was 195.45 km. and 203.31 km. in the year 1993-94 respectively.

Table 2.18 Electrified villages Enegi Pvt. tube well/pump sets.

Distt.	1990-91		1991-92		1992-93	
	El.Village	En.Pvt. tubewell pumpset	Et. Villeges	Em.Pvt Tube well p/set	Et. village	En/ Pvt. tubewell p/set
Jhansi	513	3047	523	3255	533	3411
Lalitpur	320	449	326	497	339	528
Jalaun	617	1259	623	1347	631	1387
Hamirpur	532	1215	549	1326	549	1395
Banda	747	2885	762	2019	771	3002
BKD	2720	8555	2763	9244	2823	9723

Source :- statistical Diary Jhansi Divn. 1993.

Table 2.18 presents that 513 electrified villaged and 3047 Pvt. tubewells pumpsets. energied in Jhansi distt. 320 electrified villages and 449 Pvt. tubewell/pumpsets energied in Lalitpur distt. 617 electrified villages and 1259 energied Pvt. tube wells/pumpsets in Jalaun distt. 523 electrified villages and 1215 energied Pvt tube wells/pumps sets in Hamirpur distt, 747 elecrtified villages and 2885 energied Pvt tubewell in Banda District Table 2.32 presents % of total el. consumed, per capita el. consumed. per of et. villages to total villages in BKD region. 2585 energied Pvt. tubewells/pumpset in Banda distt.. These figures are corresponding to year 1990-91. 523 electrified villages and 3255 energied Pvt. tubewell/pumpset in Jhansi distt. 326 electrified villages and 497 encergied Pvt. tubewells/ pumpset in Lalitpur distt, 623 electrified villages and 1347 energied Pvt. tubewells/pumpset in Jalund distt, 549 electrified villages and 1326 energied Pvt. tubewells pumps sets, in Hamirpur distt. 762 electrified villages and 2819 energies Pvt. tubewells of pumpsets in Banda distt. In the year 1991-92, 533 electrified villages and 3411 enegied Pvt. tubwells/pumps sets in Jhansi distt. 339 electrified villages and 528 energied Pvt tubewells/ pumps sets in Lalitpur distt. 631 electrified villages and 1387 energied Pvt. tubewells/pumps sets in Jalaun distt. 547 electrified villages and 1395 energied Pvt. Tubewells/pumpsets in Hamrpurpur distt. 771 electrified villages and 3002 energied Pvt. tubewells/pumpset in Banda distt. in the year 1992-93.

TABLE 2.19

<i>Year</i>	<i>%of consumed el. in ag. to total of counsumed 1991-92</i>	<i>per capita et. consumed in KWH 199192</i>	<i>%electrified villages total villages 1992-93</i>
<i>BKD Region</i>			
	34.3	94.5	62.80
<i>1992-93</i>			
<i>Col. (2)</i>	<i>& (3)</i> 33.2	101.0	63.59

Source statistical Diary U.P. 1994 & 1995

Table 2.19 presents that 34.4% electricity consumed in agriculture to total electricity consumed 33.1% electricity consumed in agriculture to total electricy consumed in the year 1991-92, 1992-93 respectively. It was 62.80% villages electrified to the total villags & 63.59% villages electrified to the total villages in the region in the year 1992-93 & 1993-94 respectively.

TABLE 2.20

Distwise communicational services in BKD region.

<i>Distt</i>	<i>Post office</i>	<i>Telegram offices</i>	<i>Telephones</i>	<i>Pub. Calls offices</i>
<i>1990-91</i>	<i>200</i>	<i>31</i>	<i>2695</i>	<i>37</i>
<i>Jhansi.</i>				
<i>Lalitpur</i>	<i>155</i>	<i>3</i>	<i>684</i>	<i>10</i>
<i>Jalaun</i>	<i>244</i>	<i>12</i>	<i>972</i>	<i>6</i>
<i>Hamirpur</i>	<i>236</i>	<i>10</i>	<i>655</i>	<i>75</i>
<i>Banda</i>	<i>276</i>	<i>14</i>	<i>989</i>	<i>78</i>
<i>BKD</i>	<i>1111</i>	<i>70</i>	<i>5995</i>	<i>206</i>

<i>1992-93</i>				
<i>Jhansi</i>	<i>200</i>	<i>31</i>	<i>3603</i>	<i>47</i>
<i>lalitpur</i>	<i>155</i>	<i>3</i>	<i>775</i>	<i>44</i>
<i>Jalaun</i>	<i>244</i>	<i>12</i>	<i>972</i>	<i>6</i>
<i>Hamirpur</i>	<i>238</i>	<i>10</i>	<i>709</i>	<i>75</i>
<i>Banda</i>	<i>281</i>	<i>14</i>	<i>1840</i>	<i>78</i>
BKD	1118	70	7899	250
<i>1993-94</i>				
<i>Jhansi</i>	<i>200</i>	<i>31</i>	<i>6438</i>	<i>51</i>
<i>Lalitpur</i>	<i>155</i>	<i>3</i>	<i>1177</i>	<i>12</i>
<i>Jalaun</i>	<i>244</i>	<i>12</i>	<i>972</i>	<i>6</i>
<i>Hamirpur</i>	<i>246</i>	<i>10</i>	<i>1335</i>	<i>91</i>
<i>Banda</i>	<i>286</i>	<i>14</i>	<i>3157</i>	<i>160</i>
BKD	1131	70	12107	320

Sources statistical data Jhansi division year 1993.

Table 2.20 presents that 200 post offices, 31 Telegraph offices 2695 Telephones and 37 public offices in Jhansi, 155 post office, 3 telegram offices, 684 Telephone and 10 public call offices in Lalitpur distt, 2.44 postoffice 12 telegram office, 972 telephones and 16 public wall offices in Jalaun distt. 236 post office 10 Telegram offices, 655 Telephones and 75 public call offices in Hamirpur ditt, 276 post offices 14 telegram offices 989 telephones and 78 pbulic call offices in banda distt. In this way 1111 post office 70 Telegram offices 5995 telephones and 286 public call offices in Bundelkhand region in the year 1990-91.

It was 200 post offices, 31 telegram offices, 3603 Telephones and 47 public call offices in Jhansi distt. 155 post office 3 Telegram offices, 775 telephones and 44 public call offices in Lalitpur distt. 244 post office call offices 709 Telephones and 75 punlic call offices in Hamirpur distt, 281 post offices, 14 Telegram office 840 Telephones and 78 public call offices in Banda distt, in the year 1991-92.

It was 200 post office, 31 telegram offices, 6438 telephones and 51 public call offices in Jhansi distt. 155 post offices, 3 telegram office, 1177 telephones and 12 public call offices in Lalitpur District. It was 244 post office 12 telegram office 972 telephones and 6 public call

offices in Jalaun distt, 246 post offices 10 telegram offices 1335 telephones and 91 public call their in Hamirpur distt. 286 post offices, 14 telegrame offices 3157 telephones and 320 public call offices in Banda District in the year 1992-93.

TABLE 2.21

Districtwise financial Institutions in BKD Region.

<i>Year</i>	<i>Branches of Nationalized Banks</i>	<i>Branches of Regd. Rural Banks</i>	<i>Branches of Other nationalis Banks</i>
<i>1990-91</i>			
<i>Jhansi</i>	<i>69</i>	<i>23</i>	<i>22</i>
<i>Lalitpur</i>	<i>22</i>	<i>23</i>	
<i>Jalaun</i>	<i>48</i>	<i>35</i>	
<i>Hamirpur</i>	<i>41</i>	<i>47</i>	
<i>Banda</i>	<i>36</i>	<i>83</i>	
<i>BKD</i>	<i>216</i>	<i>211</i>	<i>22</i>
<i>1991-92</i>			
<i>Jhansi</i>	<i>70</i>	<i>23</i>	<i>22</i>
<i>Lalitpur</i>	<i>22</i>	<i>23</i>	<i>-</i>
<i>Jalaun</i>	<i>48</i>	<i>35</i>	<i>21</i>
<i>Hamirpur</i>	<i>42</i>	<i>47</i>	
<i>Banda</i>	<i>36</i>	<i>83</i>	
<i>BKD</i>	<i>218</i>	<i>211</i>	<i>43</i>
<i>1992-93</i>			
<i>Jhansi</i>	<i>72</i>	<i>23</i>	<i>22</i>
<i>Lalitpur</i>	<i>22</i>	<i>23</i>	<i>-</i>
<i>Jalaun</i>	<i>48</i>	<i>35</i>	<i>21</i>
<i>Hamirpur</i>	<i>42</i>	<i>47</i>	<i>-</i>
<i>Banda</i>	<i>38</i>	<i>83</i>	<i>-</i>
<i>BKD</i>	<i>222</i>	<i>211</i>	<i>43</i>

Source :- Statistical Diary, Jhansi Division 1993.

Table 2.21 present the Branches of Nationalized banks were 69 in Jhansi 22 in lalitpur, 48 in Jalaun distt. 41 in Hamirpur Distt. and 36 in Banda distt in the end of year 1990-91. Branches of regional rural banks were 23 in Jhansi distt 23 in lalitpur distt, 35 in Jalaundistt, 47 in Hamirpur Distt, 83 in Banda distt, in this way 211 branches of regional rural banks in Bundelkhand region in the end of year 1990-91 & 1991-92, and 1992-93 respectively. Branches of new nationalized bank were 22 in Jhansi distt and 21 in Jalaun distt. In this way 43 branches. In the region in the year of 1990-91, 1991-92 & 1992-93 respectively. But 1 branch of N. Bank increased in Jhansi & Hamirpur distt in the year 1991-92 and then 2 more branches in Jhansi distt. & Banda distt respectively in the year 1992-93. In this way 222 branches of nationalized banks 211 branches of R.R. Banks and 43 branches of other non-nationalized banks in the Bundelkhand region in the year 1992-93.

Table 2.22 Credit-Deposit Ratio

	<i>Credit (Rs.Crore)</i>	<i>Deposit (Rs.Crore)</i>	<i>Credit/dep. ratio.</i>
Jhansi	116.03	379.37	30.58
Lalitpur	37.58	81.91	45.88
Jalaun	65.11	156.05	40.94
Hamirpur	58.92	142.19	44.44
Banda	60.08	138.00	43.54
BKD	337.72	900.52	37.50
Jhansi	124.56	423.94	29.38
Lalitpur	42.92	96.80	44.34
Jalaun	65.67	188.23	34.89
Hamirpur	61.67	169.57	36.37
Banda	62.55	181.17	34.53
BKD	357.37	1059.71	33.72

Source :- Statistical diary U.P. 1994 & 1995
ECO & Stat Divn., State Planning Institute LKO (U.P.)

Table 2.22 presents credit was Rs. 116.03 crores and deposit was Rs. 379.37 crores and credit/deposit ratio was 30.58 in Jhansi distt, Credit was Rs. 37.5 & crores and deposits was Rs. 81.91 crore and credit deposit ratio was 40.54 inJalaun distt. Credit was Rs. 58.92 crores and deposit was Rs. 142.19 crores and credit deposit ratio was 44.44 in Hamirpur distt, Credit was Rs. 60.08 crore, deposite was Rs. 138.00 crores and credit deposit ratio was 43.54 in Banda distt in the year ending Macrh 1994. It was credit Rs. 337.72 croires deposit Rs. 900.52 crores and credit/dep. ratio was 37.50 in the Bundelkhand region of the distt. It was credit Rs. 42.92 crores and deposits was 96.80 c rores and credit deposit ratio was 44.34 in Lalitpur distt. It was credit Rs. 65.67 crores deposit was 188.23 crores and credit deposit ratio was 34.89 in Jalaun distt. It was credit deposit 61.67 crores, deposit Rs. 169.57 crores, and credit deposit ratio was 36.37 in Hamirpur distt. It was credit Rs. 62.55 crores deposit Rs. 181.17 crores and cash deposit ratio was 34.53 in Banda distt in the year ending March - 1995. In this way, it was credit Rs. 357.37 crores, deposits Rs. 1059.71 crores and credit/deposit ratio was 33.72 in the Bundelkhand region in the year ending March - 1995.



Chapter - 3

CHAP-3

ECONOMIC ANALYSIS OF MAIN PULSES

Pulses are sown in a mixed cropping, mono cropping strip cropping and inter cropping system, Mostly pulses is a very suitable for rainfed irrigated and unirrigated areas. Pulses have short duration and long duration varieties. Pulses have their economic importance as used as pods, green fodder grains and hay. Pulse have more value after processing it. In similarly. We have put access production economics of various pulses at farm level to understand competitiveness and economic importance. In Bundelkhand region. We find black gram, green gram. pigeonpea, soyabean as a main crops in kharif, Lentil, pea, gram are main crops in Rabi and these pulses are also main pulse crops in Jalaun distt. On the basis of Information collected from farmers and villager. After selecting a simple methodology, all expenses incurred by the farmer have put in various heads as operational cost, material cost, rental value of land, interest charges, management cost and harvesting cost. Total cost is calculated after summing up all these costs. Operational cost is a sum of land tillage and sowing expenses, material cost is a sum of land tillage and sowing expenses, material cost is a sum of cost of seed, rizobium culture, watering expenses fertilizer and pesticides, Rental value is calculated on basis of land use cost, interest charges is a % of simple interest calculated on sum of material cost + operational cost, management cost is a sum of waching & overhead exps. Harvesting cost is a sum of exps. on threshing & harvesting process. After summing up all cost factor we say this total cost. On the basis of total cost, per quintal is calculated. Yield per g. have put on the average production of crop.

Gross Income is a market value of produce on the average price in a peak period. Net income is a sum subtracted the total cost out of gross. Income, Net income per day is calculated by divideing net Income by Average crop duration, Benefit cost ratio is calculated by dividing gross Income by total cost. Average crop duration is a period after sowing till harvesting.

Kharif Crops Under Rainfed Condition (Mono Cropping)

Table 3.1 Urd or Blak Gram.

Sl.No.	Item of cost	Amount (Rs.)
1.	Operational cost	712
2.	Material cost	388
3.	Rental value of land	940
4.	Interest charges	180
5.	Managenenal cost	800
6.	Harvesting cost	1890
7.	Total cost	4810
8.	Cost per qunital	801.66
9.	Yield per ha/q	6q
10.	Gross Income	6240
11.	Net Income	1430
12.	Net Income per day	1588
13.	Benefit cost ratio	1.29
14.	Average crop duration	80 days.

Table 3.1 present economic analysis of blackgram of urd. The operational cost is Rs. 712, material cost Rs. 388 Rental value of land Rs. 940, Interest charges Rs. 180, management cost Rs. 800 harvesting cost Rs. 1890. In this way total cost is Rs. 4810 for blackgram in Kharif mono cropping. cost per q. is Rs. 801.66 yield per h.a. is 6 quintal. Gross Income is Rs. 6240, Net Income Rs. 1430 Net Income per day Rs. 15.88, Benefit cost ratio is 1.29 and average crop duration is 80 days.

Table 3.2 Green Gram or Moong

Sl.No.	Item of cost	Amount
1.	Operational cost	710
2.	Material cost	360
3.	Rental value of land	1125
4.	Interest charges	198
5.	Managerial cost	900
6.	Harvesting cost	1880
7.	Total cost	5173
8.	Cost per q.	940.54
9.	yield per ha/q	5.50q
10.	Gross Income	6720.00
11.	Net Income	1547.00
12.	Net Income per day	17.18
13.	Benefit cost ratio	1.30
14.	Average crop duration	90 days.

* Based on Primary Information

Table 3.2 presents economic analysis of moong bean or green gram. The operational cost is Rs. 710, material cost 360 rental value of land Rs. 1125, interest charges Rs. 198, managerial cost Rs. 900 harvesting cost Rs. 1880. In this way total cost is Rs. 5173 for greengram in Kharif mono cropping cost per qtl. is 940.54 yield per ha. is 5.50q. gross Income is Rs. 6720 net income Rs. 1547 benefit cost ratio is 1.30, Net Income per day is 17.18 and average crop duration is 90 days.

TABLE 3.3 Kharif Under Rainted Mono Cropping

Pigeon pea Arhar (Tur)

Sl. No.	Items of cost	Amount
1.	Operational Cost	700.00
2.	Material cost	1000.00
3.	Rental value of land	3375.00
4.	Interest charges	1375.00
5.	Managerial cost	2700.00
6.	Harvesting cost	1830.00
7.	Total cost	10975.00
8.	Cost per q.	1219.44
9.	Yield q/ha.	9 q.
10.	Gross Income	16200.00
11.	Net Income	5225
12.	Net Income per day	19.35
13.	Benefit cost ratio	1.47
14.	Average crop duration	270 days

* Based on Primary Information

Table 3.3 present economic analysis of pigeon pea under mono cropping in Kharif rainfed. The operational cost is Rs. 700, material cost Rs. 1000, rental value of land Rs. 3375, Interest charges, Rs. 1370, managerial cost Rs. 2700, harvesting cost Rs. 1830. In this way total cost in Rs. 10975, cost per q. is Rs. 1219.44 yield per ha is 9 q. gross Income is Rs. 16200, Net Income Rs. 5225, net income per day in Rs. 19.35, benefit cost ratio is Rs. 1.47 and average crop durations is 170 days.

TABLE 3.4

Kharif rainfed (mixed cropping)

URD + TIL (Sesame)

<i>Sl.No.</i>	<i>Item of cost</i>	<i>Amount</i>
1.	Operational cost	712.00
2.	Material cost	295.00
3.	Rental value of lane	940.00
4.	Interest charges	180.00
5.	Managerial cost	800.00
6.	Harvesting cost	1570.00
7.	Total cost	4497.00
8.	Cost per q	817.63
9.	Yield (g/ha)	5.5 q
10.	Gross Income	6720.00
11.	Net Income	2223.00
12.	Net Income per day	24.70
13.	Benefit cost ratio	1.49
14.	Average crop duration.	90 day.

** Based on Primary Information*

Table 3.4 presents economic analysis of urd+sesame in Kharif rainfed mixed cropping. The operational cost is Rs. 712, material cost Rs. 295, Rental value of land Rs. 940 interest charges, Rs. 180 managerial cost Rs. 800, harvesting cost Rs. 1570. in this way total cost is Rs. 4497. Cost per q. is Rs. 817.63 yield per ha is 5.5 q gross income generated Rs. 6720 net income Rs. 2223 net income per day, Rs. 24.70 Benefit cost ratio is 1.49 and average crop duration is 90 days.

Rabi Crops Lentil

(Mono Cropping)

(Rainfed and Unirrigated)

Table 3.5(Grain)

Sl. No.	Items of cost	Amount
1.	Operating cost	940.00
2.	Material cst	1800.00
3.	Rental value of land	2500.00
4.	Interest charges	324.00
5.	Managerial cost	1200.00
6.	Harvesting cost	1800.00
7.	Total cost	7624.00
8.	Cost per q.	762.40
9.	Yield (q/ha)	10 q.
10.	Grossw Income	9500.00
11.	Net Income	1876.00
12.	Income per day	15.60
13.	Benefit cost ratio	1.24
14.	Average crop duration	120 days.

* Based on Primary Information

Table 3.5 presents economic analysis of gram under one irrigation in Rabi crop. The operational cost is Rs. 940, material cost in Rs. 1800, rental value of land Rs. 2500, interest charges Rs. 324, managerial cost Rs. 1200 harvesting cost Rs. 1800 in this way total cost in Rs. 7524 cost per qtl. is Rs. 762.40, yield per ha. is 10 q gross income is Rs. 9500 net income is Rs. 1876 and net income per day is Rs. 15.60 benefit cost ratio for gram is Rs. 1.24, average crop duration of this crop is 120 days.

TABLE 3.6 PEA

<i>Sl. No.</i>	<i>Item of cost</i>	<i>Amount</i>
1.	Operational cost	940.00
2.	Material cost	1680.00
3.	Rental value of land	2500.00
4.	Interest charges	312.00
5.	Managerial cost	1200.00
6.	Harvesting cost	1000.00
7.	Total cost	7632.00
8.	Cost per qt.	848.00
9.	Yield (q/ha)	971.00
10.	Gross income	9600.00
11.	Net Income	1968.00
12.	Net Income per day	16.40
13.	Benefit cost ratio	1.25
14.	Average crop duration	120

** Based on Primary Information*

Total 3.6 presents economic analysis of pea under one irrigation in Rabi crop. The operational cost is Rs. 940, material cost Rs. 1680, rental value of land Rs. 2500, interest charges Rs. 312, managerial cost Rs. 1200, and harvesting cost Rs. 1000. In this way total cost for pea is Rs. 7632, cost per q. is Rs. 848, and yield per h.a. is 9 qtl. Gross income is Rs. 9600, net income Rs. 1698 and net income per day is Rs. 16.40 benefit cost ratio is Rs. 1.25 and average crop duration is 120 day.

TABLE 3.7 LENTIL

<i>Sl. No.</i>	<i>Item of cost</i>	<i>Amount</i>
1.	Operational cost	940.00
2.	Material cost	1860.00
3.	Rental value of land	2500.00
4.	Interest charges	336.00
5.	Managerial cost	1200.00
6.	Harvesting cost	1900.00
7.	Total cost	8736.00
8.	Cost per qt.	582.00
9.	Yield (q/ha)	119.00
10.	Gross income	11500.00
11.	Net Income	2764.00
12.	Net Income per day	23.30
13.	Benefit cost ratio	1.31
14.	Average crop duration	120 days

** Based on Primary Information*

Table 3.7 presents economic analysis of lentil under Rabi crop. The operational cost is Rs. 940.00, material cost Rs. 1860, rental value of land Rs. 2500, interest charges Rs. 336 cost Rs. 1200 and harvesting cost Rs. 1900. In this way total cost is Rs. 8736 and cost per qtl. Rs. 582.40 and yield per ha. is 11 qtl. Gross income is Rs. 11500 net income Rs. 2764 and net income per day is Rs. 23.03, benefit cost ratio is 1.31 and average crop duration is 120 days.

TABLE 3.8 RAVI

Gram + Wheat

<i>Sl. No.</i>	<i>Item of Cost</i>	<i>Amount</i>
1.	<i>Operation cost</i>	<i>940.00</i>
2.	<i>Material cost</i>	<i>1605.00</i>
3.	<i>Rental value of land</i>	<i>1800.00</i>
4.	<i>Interest charges</i>	<i>201.00</i>
5.	<i>Managerial cost</i>	<i>1200.00</i>
6.	<i>Harvesting cost</i>	<i>1300.00</i>
7.	<i>Total cost</i>	<i>7046.00</i>
8.	<i>Cost per q.</i>	<i>503.28</i>
9.	<i>Yield (q/ha)</i>	<i>14 qtl.</i>
10.	<i>Gross Income</i>	<i>8600.00</i>
11.	<i>Net Income</i>	<i>1554.00</i>
12.	<i>Net Income per day</i>	<i>12.95</i>
13.	<i>Benefit cost ratio</i>	<i>1.22</i>
14.	<i>Average crop duration</i>	<i>120 days</i>

** Based on Primary Information*

Table 3.8 present economic analysis of Gram+Wheat in Rabi crop. The operational cost is Rs. 940, material cost Rs. 1605, rental value of land Rs. 1800, interest charges Rs. 201, Managerial cost Rs. 1200, harvesting cost Rs. 1300 in this way total cost Rs. 7046 net income per day is Rs. 12.95 and benefit cost ratio is 1.22 the average crop duration is 120 days.

TABLE 3.9 RABI

Lentil + Rapseed

<i>Sl. No.</i>	<i>Item of Cost</i>	<i>Amount</i>
1.	Operation cost	940.00
2.	Material cost	1798.00
3.	Rental value of land	1800.00
4.	Interest charges	332.00
5.	Managerial cost	1200.00
6.	Harvesting cost	1500.00
7.	Total cost	7570.00
8.	Cost per q.	1081.81
9.	Yield (q/ha)	11 qtl.
10.	Gross Income	10500.00
11.	Net Income	2930.00
12.	Net Income per day	2930.00
13.	Benefit cost ratio	1.31
14.	Average crop duration	120 days

** Based on Primary Information*

Table 3.9 present economic analysis about lentil + Rapseed in Rabi crop. The operational cost Rs. 940, material cost Rs. 1798 rental value of land Rs. 1800, interest charges Rs. 332, managerial cost Rs. 1200, and harvesting cost Rs. 1500, in this way total cost is Rs. 7570 and cost per qtl. is Rs. 1081.82 and average yield is 11q/ha. Gross Income is Rs. 10500 net income Rs. 2930, and net income per day is Rs. 24.41 and benefit cosr ratio is 1.38 and average crop duration is 120 days.

TABLE 3.10 RABI

Pea + Rapseed

<i>Sl. No.</i>	<i>Item of Cost</i>	<i>Amount</i>
1.	Operation cost	940.00
2.	Material cost	1190.00
3.	Rental value of land	2800.00
4.	Interest charges	336.00
5.	Managerial cost	1200.00
6.	Harvesting cost	1300.00
7.	Total cost	7766.00
8.	Cost per q.	776.60
9.	Yield (q/ha)	10 qtl.
10.	Gross Income	9000.00
11.	Net Income	1234.00
12.	Net Income per day	10.28
13.	Benefit cost ratio	1.15
14.	Average crop duration	120 days

** Based on Primary Information*

Table 3.10 present economic analysis Pea+Rapseed in Rabi crop. The operational cost Rs. 940, material cost Rs. 1190, rental value of land Rs. 2800, interest charges Rs. 336, managerial cost Rs. 1200, and harvesting cost Rs. 1300, in this way total cost is Rs. 7766 and cosr per qtl. is Rs. 776.60 and average yield is 10q/ha. Gross Income is Rs. 9000 net income Rs. 1234, and net income per day is Rs. 10.28. Benefit cost ratio is 1.15 and average crop duration of this (pea+Rapseed) is 120 day.

TABLE 3.11 RABI

Gram + Linseed

<i>Sl. No.</i>	<i>Item of Cost</i>	<i>Amount</i>
1.	Operation cost	940.00
2.	Material cost	1615.00
3.	Rental value of land	1800.00
4.	Interest charges	400.00
5.	Managerial cost	1200.00
6.	Harvesting cost	1600.00
7.	Total cost	7555.00
8.	Cost per q.	839.44
9.	Yield (q/ha)	9 qtl.
10.	Gross Income	9200.00
11.	Net Income	1654.00
12.	Net Income per day	13.70.
13.	Benefit cost ratio	1.21
14.	Average crop duration	120 days

** Based on Primary Information*

Table 3.11 present economic analysis of Gram + Linseed in Rabi crop. The operational cost Rs. 940, material cost Rs. 1615 rental value of land Rs. 1800, interest charges Rs. 400, managerial cost Rs. 1200, and harvesting cost Rs. 1600, in this way total cost is Rs. 7555 and cost per qtl. is Rs. 839.44 and average yield is 9q/ha. Gross Income is Rs. 9200 net income Rs. 1645, and net income per day is Rs. 13.70 and benefit cost ratio is 1.21 and average crop duration is 120 days.

TABLE 3.12

Bye products % in various crops-

Crop	Total production %	Green fodder %	Hay %	Grain %	Loss or wastage %
<u>Kharif</u>					
Black gram	100.0%	55%	20%	10%	15%
Green gram	100.0%	56%	22%	10%	12%
Pigeon pea	100.0%	35%	19%	11%	35%
Soyabean	100%	45%	17%	13%	25%
Urd+Sesame	100%	40%	18%	12%	30%
<u>Ravi</u>					
Pea	100%	18%	40%	16%	26%
Gram	100%	20%	50%	14%	16%
Lentil	100%	15%	53%	13%	19%
Gram+Wheat	100%	20%	40%	18%	22%
Gram+Linseed	100%	18%	44%	18%	20%
Pea+Repseed	100%	26%	32%	14%	28%
Lentil+Rapseed	100%	22%	34%	14%	30%

* Based on Primary Information

Table 3.12 present figure of Bye products percentage in various crops. In Kharif crop, Blackgram has 55% green fodder, 20% hay, 10% grain and 15% loss share. In Green gram has 56% green fodder 22% Hay, 10% grain and 12% of Loss share. Pigeon pea has 35% green fodder, 19% hay, 11% grains and 35% loss share. In soyabean we can find 45% green fodder, 17% hay, 13% grain and 25% loss share. In mix crop Urd + sesame has 40% green fodder, 18% hay, 12% grain and 30% loss share.

In Ravi crop we confind pea has 18% green fodder. 49% hay, 16% grain and 26% wastage of loss. Gram has 20% green fodder, 50% hay, 14% grains and 16% wastage. Lantil has 15% green fodder, 53% hay, 13% grain and 19% loss or wastage, Gram + wheat has 20% green fodder, 40% hay, 18% grains, and 22% as a wastage. Grain and 22% as a wastage. Pea+Rapseed has 26% green fodder, 32% hay, 14% grain and 28% as a wastage. Lentil + Rapseed 22% green fodder, 34% hay, 14% grains and 30% as a wastage.

TABLE 3.13

Production share % for various purpose

<i>Crops</i>	<i>Total production %</i>	<i>Personal ise %</i>	<i>Seed %</i>	<i>Marketable surplus %</i>	<i>Loss or wastage %</i>
<u>Kharif</u>					
Black gram	100%	8%	3%	79%	10%
Green gram	100%	8%	2%	78%	12%
Pigeon pea	100%	6%	2%	80%	12%
Soyabean	100%	14%	3%	73%	10%
Urd+Sesame	100%	9%	2%	79%	10%
<u>Ravi</u>					
Pea	100%	12%	8%	70%	10%
Gram	100%	14%	6%	71%	9%
Lentil	100%	18%	9%	60%	13%
Gram+Wheat	100%	30%	10%	48%	12%
Gram+Linseed	100%	13%	9%	68%	10%
Pea+Repseed	100%	15%	11%	64%	10%
Lentil+Rapseed	100%	13%	11%	66%	10%

* Based on Primary Information

Table 3.13 presents figure about production share percentage of various crops. It is for blackgram 8% personal use, 3% seed, 79% marketable surplus and 10% as loss. It is for green gram, 8% personal use, 2% seed 79% marketable surplus and 12% as a loss. It is for pigeon pes, 6% personal use, 2% seeds, 80% marketable surplus, and 12% as loss. It is for soyabean 14% personal use, 3% seed, 73% marketable surplus and 10% as loss.

In Rabi crops, it is for pea 12% as personal use, 8% seeds, 70% marketable surplus and 10% as a loss. It is for gram 14% for personal use, 6% seed, 71% marketale surplus and 13% as a loss. It is for (gram+wheat) as 30% for personal use, 10% per seeds, 48% marketable surplus and 10% as loss. It is for (Pea+Rapseed), 15% for personal use, 11% seed, 64% marketable surplus and 10% as a loss. It is for (Lentil+Rapseed) 13% for personal use, 11% seed, 66% marketable surplus and 10% as a loss. This analysis is based on producer farmers behaviour and use- pattern of various products under Kharif and Rabi crops.

TABLE 3.14

Opinion survey of farmers in Jalaun Distt.

Sr.No.	Particulars	Opinion	Percentage
		Yes	Yes
1.	Farming system		
	- Traditonal	120	60
	- Scientific	30	15
	- Mixed	50	25
2.	Irrigation facilities		
	- Wells	20	10
	- Tubewells	12	6
	- Canals	120	60
	- Tank/Raver/noiirig.	40	80
3.	Loan		
	- Agricultural Machinery	16	8
	- Land Reform	24	12

<i>Sr.No.</i>	<i>Particulars</i>	<i>Opinion</i>	<i>Percentage</i>
		<i>Yes</i>	<i>Yes</i>
	- Irrigation system	20	10
	- Personal use	15	7.5
	- No Loan	125	62.5
4.	Transporting system		
	Metalled Roads	30	15
	Unmetalled Roads	45	22.51
	Link Roads	125	6.25
5.	Means of Transport		
	Tractor	30	15
	Bus	120	60
	Bullockcartno means	50	25
6.	Servicesector facilities		
	Bank	20	10
	Godwn	10	15
	Coo--Socities	30	15
	Marketing information	120	60
	M.P. Farmers serv. societies	20	10
7.	Products marketing by farmers		
	Rural Traders	10	5
	Rural Traders	35	17.5
	Mandsamities	135	67.5
	Coop societies	15	7.5
	Govt. Agencies	5	2.5
8.	Source of Marketing Information		
	Radio News	40	20
	Friends/Neighbours	12.5	62.5
	Retail traders	20	10
	News papers	15	7.5
9.	Payment systems		
	Immediately cahs	25	12.5
	Slip system	170	85
	Cheque	5	2.5

Sr.No.	Particulars	Opinion	Percentage
		Yes	Yes
	Other means	-	
10.	Storage facilities		
	Rural Godown	20	10
	Coop godown	30	15
	State of non-option	150	75
11.	Facilities in Mandi yard		
	Godown	120	10
	Insurance	20	10
	Rest House	160	80
	Animal shed	175	87.5
	Water Trough	160	80
12.	Profitability of Regulated		
	Marketingsystem	160	80
13.	Change in Ag. Poducts		
	Marketing system	30	15
14.	Increase in pulse production Area	30	15
	Decrease in pulse production Area	140	70
15.	Opinionabout effectiveness of	168	84
	marketing system.		

* Based on Primary Information

Table 3.14 presents analysis of opinion survey of farmers in study area Jalaun distt. Out of 200 farrmers their opinions were as follwos 120 farmers opted traditional farming, 30 farmers opted scientific and 50 farmers opted mixed system of farming. Out of all farmers questioned 20 opted irrigation by wells, 12 opted irrigation by tubewells 120 opted by calans and 8 farmers opted irrgrationby tanks/Rivers and 40 opted no means of irrigation. About loan facility 16 opted for Agricultural machinery 24 opted for land refoorm 20 opted for irrigation system, 15 opted loan for personal use and 125 opted about no plans. In reference to transporting system, 30 opted metaled roads, 45 opted unmet aled roads, and 125 opted link roads to connecting their villages and 30 opted tractors use 120 opted. Buses and 50 farmer opted bullock cart use to nearest places transportation, farmers opioion about service

sector facilities given in this way, 20 opted banks facilities, 10 opted godown facilities 30 opted cooperative societies and 120 opted about marketing information and 20 opted about multi purpose farmers service societies products marketing by farmers opted as follows. 10 farmers sold their products in rural markets 25 sold to rural tractors and 135 farmers opted their products selling in mandi samities, 15 opted products selling by cooperative societies and only 5 opted their products sell by govt. agencies. Sources of marketing information opinion were in this way 40 get radio news 125 got inform by their friends and neighbours, 20 get inform from retail traders and 15 farmers get inform by news papers opinion about payment system for their produce selling were as follows. 25 opted immediate cash payment, 170 opted payment by slip systems and 5 opted by cheque. Storage facilities opinion as opted by farmers is in this way 20 opted rural godown facilities, 30 opted cooperative godown facilities and 150 opted non facilities of storage. opinion about facilities provided in mandi samiti yards opted in following way. 120 farmers opted godown facilities, 20 opted insurance 160 opted facilities of Rest house in mandi samities 175 opted animal shed and 160 opted water trough facilities for animals drinking water. Opinion of profitability of regulated marketing system opted by 160 farmers and 30 farmers opted change in agricultural products marketing system. Increasing trends in pulse producing area shown by 30 farmers, and decreasing trends in pulse producing area shown by 140 farmers and 30 opted no opinion. opinion given by 168 farmers about effectiveness of marketing system.

MIXED CROPPING

Mixed cropping is a practice of sowing. The seed mixtures of two or more than two crops on same piece of land. In jalaun distt. of bundelkhand region, it is a common practice followed by farmers from very ancient times which covers the risk of complete crop failure and to get more than one type of produce from same piece of land at same time. It fulfils the multiple requirement of farmers. It has been seen that in Bundelkhand region more than three-fifth ($3/5$) of cultivated

area is under mixed cropping is higher as compared to sole crop under unfavourable and favourable both the climatic conditions. As we are aware That during kharif season and heavy rain fall cause soil erosions which reduce the productivity of soil by croding the fertile soil layer from the field.

Table 3.15

Effect of crop mixture on yield and Income

Treatments	Grain yields/ha		Income/ha
	Main Crop.	Associate Crop/	
Urd+Sesame	5q.	0.5q	2223
Gram+Wheat	10q	4.0q	1554
Lentil+Rapseed	9.5q	1.5q	2930
Pea+Rapseed	8.5q	1.5q	1234
Gram+Linseed	8 q	1q	1645

* Based on Primary Information

Table 3.15 reported that the mixture cropping of lentil+ Rapseed gave higher profit over rest of the crops. Urd+Sesame gave production 5.5q out of 5 q urd 0.5q sesame giving income of Rs. 2223/ha. Gram+Wheat production of 14q out of 10q wheat & 49 gram giving Rs. 1554/ha. Lentil+Rapseed gave production of 9.5q of main crop & 1.5q associated crop giving Income Rs. 2930/ha. Pea+Rapseed gave production of 10q out of 8.5q pea & 1.5 Rapseed giving income Rs. 1234/ha. Gram+Linseed. gave production of 10q out of 8 q main crop and 1 q associated crop giving income Rs. 1645/ha. The different experiments have proved the mixture cropping is more profitable and high yielding as compare to sole cropping. It has also been that under mixed cropping the build up of soil fertility was more than sole cropping.

INTER CROPPING

Inter cropping is a practice of growing two or more than two crops simultaneously on the same area of ground. The crops are not necessarily sown at exactly the same time and their harvest time may be quite

different but they are usually simultaneous for a significant part of their growing periods. Intercropping advantages are not only by using costly input but by the simple expedient of growing crops together. It has a greater stability of yield over the seasons under adverse climatic conditions also.

In Jalaun distt of Bundelkhand, regional environments the major regions for predominance of inter cropping in poorly developed agriculture specially under rainfed condition, it gives greater stability of yield. The main basis is that if one crop fails or grows poorly the other component crop compensation is not possible when these crops are grown separately. The both crops grown together having different growth nature are able to utilize the natural resources in better way at the same time. The selection of suitable intercropping systems in rainfed conditions provide production certainties under proper cereal and pulses combination.

The major impact in pulse production will come only when Rabi pulse crops especially chickpea and to some extent lentil, find their place as a companion crops, with high yielding varieties of wheat. Though this intercropping system appears feasible, the available genotypes of chickpea are good only for medium inputs. Therefore, an attempt has to be made to identify/enhance genotypes which respond to similar agronomic practices as irrigated wheats, especially the high doses of phosphatic compounds.

The Indian farmer has been practicing mixed cropping since centuries whereby seeds of 2 or more crops were sown mixed on the same piece of land and the proportion of the seed mixture reflected the need of the farmer. This was however, a low yield technology. With time and increase in population exerting more pressure on the land, the subsistence agriculture became outmoded and paved the way for the present day high input intensive production agriculture.

Perhaps the most practical way to increase the cropping intensity in drylands is through inter cropping systems. In regions receiving 700-

800 mm or more of rainfall, a package of cropping pattern for the entire year could be evolved for different locations and zones which would include inter cropping and sequence cropping systems already found suitable and remunerative over the years.

The availability of crop varieties of different growth habits, maturity duration and new crop Production techniques have helped in the evolution of intercropping system. The main objectives of an intercropping system is that the yield of the principal crop should be least affected and an additional bonus yield would be obtained from the subsidiary crop in a relatively short time. Intercropping also offers an opportunity for profitable utilization of the interspace between the rows of the main crop. besides cutting down on the direct cost of cultivation of the main crop by effectively controlling the weeds, Because reduced weed infestation, nutrients and water from the soil profile are fully utilized.

Pulses by virtue of their plant type. Maturity duration and root system thrive well on a wide range of soils and climatic conditions. This unique ability makes them suitable for different crop combinations. Which farmers have been practicing. Some of the important inter cropping combinations are chickpea+mustard, pea+mustard, lentil+Linseed Lentil+mustard pigeonpea+ground nut, pigeonpea+ millet, pigeonpea+black gram & pigeonpes+ greengram etc.

In Graden Lands, Where a wide variety of plantation Crops Fruit trees etc are grown. It is possible to utilize the interspace by growing short duration varieties of greengram or blackgram or cowpea on lentil in Kharif. Ravi depending upon the availability of soil moisutre. This would help in bringing certain additional production of Pulses without any loss to the plantation Crops.

It is possible to grow short durtion pulse Crops, such as Greengram, Blackgram, Cowepa etc. In the new plantations of horticultural Crops. The pulse Crops besides giving additional income will help farmers in checking soil erosion and conserving rainwater.

STRIP CROPPING

It is observed in Jalaun district of Bundelkhand Region, Farmers are using pulses with associated or main crop as a strip Cropping, as pigeonpea is grown with groundnut, sesame or millet as a strip way. Because its tall size is helpful to provide more income without losing anything, Pigeon pea is also grown on boundary of fields as a strip Cropping and Farmers are using lentil with strip Cropping of rapeseed, pea with strip Cropping of rapeseed, Gram are also shown with strip Cropping of linseed or mustard. Strip cropping is also a promising system of more income to the grower and utilize the piece of land more effectively.

Intensification of pulse cultivation in the command area-

The country is embarking upon the development of a major irrigation system with the planned addition of nearly 11 Million hectares of land under irrigation during the seventh plan. It is likely that around 70 Million hectares under irrigation with assured cultivable conditions would be available by 1989-90. If pulses are grown as potential crops under irrigation in command area, then there is every possibility of breaking through the monotony of low yield levels. While introducing these crops into irrigated areas. It is essential to (1) Apply appropriate technology with advantage in these command areas and (2) Educate the Farmers about the significance and importance of having pulse crops as a part of the cropping system and to persuade them to apply such appropriate technology as is necessary to optimize the pulse productivity.

As indicated earlier substantive efforts are also being made to promote research on pulses. Since pulse production technology is becoming highly location specific and since then crops are being grown under highly heterogeneous situations all over the country, there is an urgent need to undertake and intensify research to find solution to the problems of specific areas and regions. Keeping these objectives in mind, further applied research in command area should be oriented toward the following 2 directions (1) To generate the knowledge to maximize production under

the irrigated system and (2) To disseminate such technology that would stabilize Yields and increase the production through various multiple Cropping systems.

With regard to dissemination of technology to educate the command area Farmers, It is proposed to link up the research centres with the krishi Vigyan Kendra whose concept of training is Learn while you work without much emphasis on literary abilities of the clientele or the participants.



Chapter - 4

CHAPTER-4

ECONOMICS OF MARKETING AND PROCESSING OF PULSES

Marketing is a prolific process. Marketing is as old as agricultural practices also. Marketing is a factor which affected production of any commodity. If prices are promising and remunerative it encourage producers to grow more and if prices have declining trend, It decrease market arrivals and discourages farmers. Marketing plays key role in pulses marketing. Pulses have trend to come larger part in marketing process because in any local area Farmers uses pulses a very little part as personal use & seed and sold 4/5 shares. Pulses used after processing for various uses. Milling of pulses is necessary to made it possible for many uses.

Progressive and prudent Farmer are keen to get highest prices for their product. So it is said they have one eyes on production and another eyes on markets but now-a-days they have both hands on production and both eyes on marketing. Farmers are interested in getting reasonsable and highest prices for their product. Because farming practice has shifted from subsistence to commercial farming. Modern farming is invest intensive and summing up of new HYV seeds scientific and advanced practice more inputs & changing Face of agriculture. It results higher production and attractive prices.

Pulses are sold at various stages. It has a large link of inter mediate. If this chain is long it reduces procuers share in consumers rupees. If it is short it gives more mony to producers. Different channels of marketing can be discuss in given chart.

Table 4.1

Marketing Channels

Marketing channel of product flow chart

1. Producer	-	Consumer
2. Producer - Village trader	-	Consumer
3. Producer - retailer-wholeseller	-	Consumer
4. Producer - Wholeseller-retailer	-	Consumer
5. Producer - Coop societies	-	consumer Distb. system
6. Producer - Govt Agencies	-	Fair price shops
7. Producer - retailer-wholeseller	-	Processor-Consumers.

* Based on local marketing system in study area.

Producer to consumer is a simple and direct link of marketing. But it leads a very little portion under this process. It happens occasionally to find consumer at their door step. It is a highly profitable and promising prices of their produces only small and marginal Farmers have good apporintunity to find chance of direct selling to consumer. Producer Village trader-consumer is a simple channel of marketing. Needy person came to know for find out any commodity to village traders. Village trader have a sufficient stock to fulfill their need at village level. Village dweller labourer and artisan are buyers at Village level. They try to find pulses for their annual need so they can get them without paying a lot on these daily use to fulfill their dietary needs.

It is observed in rural areas of Bundelkhand that two channels of plses marketing is existed in great extent viz. Producer Village trader whotseller consumer & producer wholeseller-retailer consumer, farm products have tend to flow to market direct mandi yard or by hand of village trader to mandi yard. Then it is graded and shorted clearly to get optimum prices of the product.

Next channel can be put as follows producer coop system, coop distribution system. This well organised system is not very popular in the local marketing of Bundelkhand Region. Farmer producer have no high liking or interested to sell by coop societies. These societies could not get proper share in the marketing process. Producer-Govt. agencies to fair price shops this system is a Govt aided channel of marketing. Few article of Farms products prefer by these Govt agencies. So Govt Agencies also could not get proper share in marketing system of pulses in local mandi yards of Bundelkhand Region.

Producer-retailer-Wholeseller-Processor-Consumer is also a well known system of pulses marketing. Pulses are not consumed directly. Before consumption these pulse processed. After processing this pulses becomes ready to various uses. Processing increases value of these commodities and provides more scope of marketing to give high rate of margin to intermediaries engaged in marketing process.

It is well known factor that Farmers are not well equipped and aware to get proper share in their products prices. They are simple and having lack of commercial tactics to multiply market value of their products. This trend is also applicable in case of marketing of pulses.

It is observed that expenses incurred by producers are freight, toll tax, weighing, discount mandi fee as entrance fee and other associated expenses. Expenses incurred by wholesale traders include mandi fee, commission, brokerage, auction filling of bags, sewing, transportation and other associated expenses incurred by retailer includes hiring, trade tax, packing and other associated charges. In this way costs cleared in three stages expenses incurred by farmers (Producers) Traders and retailer. This system is well established invarious manidies in Jalaun distt, and also in Bundelkhand Region in peak period of agri-marketing.

Table 4.2

Estimates of price spread, marketing cost and margin for Black Gram.

Sl. No.	items	Cost Rs./of	Percentage cost
1.	Net Price received by the producer	1040	85.95
2.	Expenses incurred by producer	19	1.57
3.	Price received by producer/ purchase price of wholesale traders	1059	87.52
4.	Expenses incurred by wholesale traders	27	2.33
5.	Margin of wholesale traders	43	3.55
6.	Price received by wholesale traders/ purchase price of retailers	1129	93.30
7.	Expenses incurred by retailers	37	3.06
8.	Margin of the retailers	44	3.64
9.	Sales price of the retailer/ purchase prices paid by consumers	1210	100.00
10.	Price spread	170	14.05

* Based on primary Information.

Table 4.2 present marketing economics of blackgram in various mandies in the study area. It is observed that net prices received by producers is Rs. 1040. It is 85.95% of consumers price expenses incurred by producer is Rs. 19 and 1.57% of consumer price purchase price of whole sale trader is Rs. 1059 and 87.52 of consumer rupees. Expenses incurres by whole sale traders in Rs. 27 and his margin is Rs. 43 purchase price of retailer/price received by whole sale trader is Rs. 1129, expense incurred by retailer and his margin is Rs. 37 and Rs. 44 respectively. Sale price of retailer/purchase price of consumer is Rs. 1210 price spread in this process is Rs. 170 in this way incurred wholesaler is 2.23% margin 3.55% retailers purchase price is 93.30% expenses incurred by retailer is 3.06% and his margin is 3.64% in this way price spread is 14.05% in marketing of Black Gram.

Table 4.3 (Kharif)

Estimates of price spread, marketing cost and margin for Greengram.

Sl. No.	items	Cost Rs./of	Percentage cost
1.	Net Price received by the producer	1199	87.20
2.	Expenses incurred by producer	21	1.52
3.	Price received by the producer/ purchase price of wholesale traders	1220	88.72
4.	Expenses incurred by wholesale traders	37	2.69
5.	Margin of wholesale traders	44	3.20
6.	Price received by wholesale traders/ purchase price of retailers	1301	94.61
7.	Expenses incurred by retailers	32	2.33
8.	Retailers margin	42	3.06
9.	Sales price of the retailer/ purchase prices paid by consumers	1375	100.00
10.	Price spread	176	12.80

* Based on primary Information.

Table 4.3 presents marketing economics of greengram in following way. Net price received by the producer is Rs. 1199 and expenses incurred by him Rs. 21 in this way price received by producers or purchase price of whole sale traders in Rs. 1220 and expenses incurred by him and his margin is Rs. 37 and Rs. 44 respectively. In this way price received by wholesaletrader/purchase price of retailer is Rs. 1301, retailers expenses and margin is Rs. 32 and Rs. 42 respectively. It this way sale price of the retailer or purchase price paid by consumer is Rs. 1375 and pricespread is Rs. 176 in the marketing behaviour of Green Gram in Mandi yards of jalaun Dist in peak season of Agricultural marketing. Net price received by producers is 87.20% expenses incurred by his is 1.52% and wholesalers purchase price is 88.72% retail sale traders expenses and margin is 2.59% and 3.20% respectively. Purchase

price to retailer expenses incurred by him & his margin is 94.61%, 2.33% and 3.06 respectively. In Marketing of green gram price spread is 12.80% in study area.

Table 4.4 present marketing economics of pigeon pea in Jalaun District's. Mandies. Net Price received by producers and expenses incurred by him Rs. 1780 and Rs. 20 respectively purchase price of wholesales/ price received by producer is Rs. 1800. Whole salers expenses and margin is Rs. 37 and Rs. 42 respectively. In this way sale price of retailer purchase price of retailer expenses incurred by retailers and retailers margin is Rs. 1879, Rs. 38 and Rs. 48 respectively.

Table 4.4 (Kharit)

Estimate of price spread, Marketing cost and margin of pigeon pea.

Sl. No.	items	Cost Rs./of	Percentage cost
1.	Net Price received by the producer	1780	90.58
2.	Expenses incurred by producer	20	1.02
3.	Price received by Producer/ purchase price of wholesale traders	1800	91.60
4.	Expenses incurred by wholesale traders	37	1.88
5.	Margin of wholesale traders	42	2-14
6.	Price received by wholesale traders/ purchase price of retailers	1879	95.62
7.	Expenses incurred by retailers	38	1.49
8.	Margin of the retailers	48	.44
9.	Sales price of the retailer/ purchase prices paid by consumers	1965	100.00
10.	Price spread	185	9.42

* Based on primary information.

In this way sale price of retailers/price paid by consumer is Rs. 1965, and price spread in pigeonpea Marketing is Rs. 185 in Mandi yards of jalaun Distt. Percentage share is as follows net price received by producer is 90.58% producers expenses 1.02%, wholesale traders purchase price is 91.60% expenses, margin of whole sale traders is 1.94% and 2.44% respectively. Retailers purchase price, expenses and margin in 95.62%, 1.94% and 2.44% respectively in this way price spread in pigeon pea Marketing is 9.42% in Jalaun Distt.

Table 4.5(Kharif)

Estimates of price spread, Marketing cost and margin for Soyabean.

Sl. No.	items	Cost Rs./of	Percentage cost
1.	Net Price received by the producer	928	83.61
2.	Expenses incurred by producer	22	1.98
3.	Price received by producer/ purchase price of wholesale traders	950	85.58
4.	Expenses incurred by wholesale traders	36	3.24
5.	Whole sale traders Margin	46	4.15
6.	Price received by wholesale traders/ purchase price of retailers	1032	92.97
7.	Expenses incurred by retailers	33	2.97
8.	Retailes margin	45	4.06
9.	Sales price of the retailer/ purchase prices paid by consumers	1110	100.00
10.	Price spread	182	16.39

* Based on primary information.

Talbe 4.5 presents Marketing economics of soyabean in mandies of jalaun Distt in following way. Net price received by producers and producers expenses is Rs. 928 and Rs. 22 respectively. Price received by producers/purchase price of whole sale traders. Whole sale traders

expenses, and his margin is Rs. 36 nad Rs. 46 respectively. Price received by whole sale trader/purchase price of retailers, retailers cost and margin is Rs. 1032, Rs. 33 and Rs. 45 respectively, sale price of retailer or price paid by consumers is Rs. 1110 and price spread in this process is Rs. 182 in jalaun Distt Mandies.

Percentage of different cost as followd Net price received by producers and producer expenses is 83.6% and 1.98% wholesale traders price, whole sale traders expenses and margin is 85.58%, 3.24% and 4.15% respectively. retailers purchase price retailers expenses and his margin is 92.97% 2.97% and 4.06% respectively. In this way price received by retailers/purchase price of consumer and price spread is 100% and 16.39% in Marketing of soyabean in jalaun Distt.

(Ravi) Table 4.6

Estimates of price spread, Marketing cost and margin for pea.

Sl. No.	items	Cost Rs./of	Percentage cost
1.	Net Price received by the producer	929	84.45
2.	Expenses incurred by producer	21	1.91
3.	Price received by producer/ purchase price of wholesale traders	950	86.36
4.	Expenses incurred by wholesale traders	32	2.91
5.	Wholesale traders margin	43	3.91
6.	Price received by wholesale traders/ purchase price of retailers	1025	93.18
7.	Expenses incurred by retailers	33	3.00
8.	Retailers Margin	42	3.82
9.	Sales price of the retailer/ purchase prices paid by consumers	1100	100.00
10.	Price spread	171	15.55

* Based on primary information.

Table 4.6 presents Marketing economics of pea in Mandies of Jalaun Distt in following way, Net price received by producer and expenses incurred by producer is Rs. 929 and Rs. 21 respectively. Price paid by whole trader, expenses of wholesale traders, and his margin is Rs. 950, Rs. 32 and Rs 43 respectively. Price received by wholesale/purchase price of retailer retailers expenses and his margin is Rs. 1025 Rs. 33 and Rs. 42 respectively. Sale price paid by consumer/price received by retailers is Rs. 1100 and price spread is Rs. 171 in marketin of pea in jalaun Distt mandies.

Percentage of various cost given as follows net price received by producer and producers expenses is 84.45% and 1.91% respectively price paid by whole sale traders/purchase price of retailers expenses and his margin is 93.18%, 3.0% and 3.82% respectively. In this way price spread is 15.55% in Marketing of pea in Jalaun Distt Mandies.

Table 4.7 (Ravi)

Estimates of price spread, Marketing cost & Margin for Gram.

Sl. No.	items	Cost Rs./of	Percentage cost
1.	Net Price received by the producer	1035	85.18
2.	Expenses incurred by producer	20	1.65
3.	Price received by producer/ purchase price of wholesale traders	1055	86.83
4.	Expenses incurred by wholesale traders	40	3.29
5.	Wholesale traders/Margin	42	3.46
6.	Price received by wholesale traders/ purchase price of retailers	1137	93.58
7.	Retailer expenses	33	2.72
8.	Retailers margin	45	3.70
9.	Price received by retailer/sale price to consumer	1215	100.00
10.	Price spread	180	14.82

* Based on primary information.

Table 4.7 presents marketing economics for Gram in Ravi season. Net price received by producer and expenses incurred by producer is Rs. 1035 and Rs. 20 respectively. Purchase price of wholesale trader/price received by producer is Rs. 1055, wholesale traders expenses and wholesale traders margin is Rs. 40 and Rs. 42 respectively price received by wholesale trader, retailer expenses and retailers margin is Rs. 1237 Rs. 33 and Rs. 45 respectively in this way price received by retailer/price paid by consumer is Rs. 1215. In local mandies of Jalaun Distt.

Percentage shares as follows net price received by producer 85.18% producer expenses 1.65% and wholesale traders expenses 2.39% and wholesale traders margin 3.46% respectively price received by wholesaler trader/retailer purchase price is 93.58% retailers expenses, retailers margin 2.72% and 3.70% in this way price spread is 14.82% respectively.

Table 4.8

Estimates of price spread marketing cost and margin for lentil.

Sl. No.	items	Cost Rs./of	Percentage cost
1.	Net Price received by the producer	1025	85.06
2.	Expenses incurred by producer	20	1.66
3.	Price received by producer/ purchase price of wholesale traders	1045	86.72
4.	Expenses incurred by wholesale traders	33	2.74
5.	Wholesale traders margin	47	3.90
6.	Price received by wholesale traders/ purchase price of retailers	1125	93.36
7.	Expenses incurred by retailer	35	2.70
8.	Retailers margin	45	3.74
9.	Price received by retailer/sale price to consumer	1205	100.00
10.	Price spread	180	14.94

* Based on primary information

Table 4.8 presents marketing economics of lentil in jalaun Disst. The net price received by producer is Rs. 1025 and producers expenses is Rs. 20 purchase price of whole sale trader, whole sale traders expenses and his margin is Rs. 1045, Rs. 33 and Rs. 47 respectively. Price received by whole sale trader/purchase price of retailers, expenses incurred by retailers and his expenses is Rs. 1045, Rs. 33 and rs. 47 respectively price.

Percentage is given as follow, net price received by producers is 85.06% producers expenses Rs. 1.66%. price paid by wholsale trader is 86.72% Exp. Incurreb by wholesaler is 2.74% and wholesaler margin is 3.90%. Price received by wholesaler/price paid by retaiter is 93.76% expenses incurred by retailer and his margin is 2.70% and 3.74% respectively price paid by consumer is centpercent. In this process price spread in marketing economics is 14.94% respectively.

PROCESSING OF PULSES

Economic analysis of processing based on few cost concepts as transportation cost, it include inward and outward carrying charges of raw material, purchase price of processor is a marketing price of wholesaler or mandi traders, labour charges includes all cost of mannual work, Light & power includes all charges pertaining to electricity and lighting equipments, office expenses contains all expenses pertaining to salary allowances and other cash and carry incentive to permanent employees. Depareciation includes charges based on cost of plant & machinery. Taxes includes mandi tax, trade tax and other taxes, other expenses and loss in weight is charged for loss of pulses weight after processed. After summing up all these cost factor we get total cost net processing cost (cost) is given on basis of difference of total cost-purchasing price of given pulses. Percentage of cost is based on cost multiplied by 100 and it divided by total cost. All these cost factor chosen by researcher himself and base of analysis is caulated information collected from study areas pulse millers. Well chosen method selected for calculation in these concepts.

Table 4.9

Kharif Pulses
Estimates of Processing Expenses for Blackgram

S.No.	Item	Rs. per qtl.
1.	Purchasing price	1059
2.	Transportation cost	9
3.	Labour charges	10
4.	Light & power	3
5.	Office expenses	4
6.	Depreciation	9
7.	Taxes	16
8.	Other Exp. & loss in weight	56
9.	Total cost	1166
10.	Processing cost	107
11.	%of processing cost	9.17%

Based on primary information

Table 4.9 presents economic analysis of processing expenses for blackgram. The purchase price is Rs. 1059 transportation cost Rs. 9, labour charges Rs. 10, light & power charges Rs. 3, office expenses is Rs. 4, depreciation is Rs. 9, taxes are Rs. 16, other expenses and loss in weight is Rs. 56, In this way total cost is Rs. 1166 and processing cost is Rs. 107, The processing cost is 9.17% of total cost.

Table 4.10

Estimates of Processing Expenses for Green gram

S.No.	Item	Rs. per qtl.
1.	Purchasing price	1220
2.	Transportation cost	9
3.	Labour charges	10
4.	Light & power	3
5.	Office expenses	4
6.	Depreciation	9
7.	Taxes	18
8.	Other Exp. & loss in weight	72
9.	Total cost	1345
10.	Processing cost	125
11.	%of processing cost	9.29%

Based on primary information

Table 4.10 presents economic analysis of processing cost for green gram the purchasing price is Rs. 1220, transportation cost Rs. 9, labour charges Rs. 10, light & power charges Rs. 3, office expenses is Rs. 4, depreciation is Rs. 9, taxes are Rs. 18, other expenses and loss in weight is Rs. 72, In this way total cost is Rs. 1345 and processing cost is Rs. 125, The processing cost is 9.29% of total cost.

Table 4.11

Estimates of Processing Expenses for Pigeon pea

S.No.	Item	Rs. per qtl.
1.	Purchasing price	1800
2.	Transportation cost	9
3.	Labour charges	10
4.	Light & power	3
5.	Office expenses	4
6.	Depreciation	9
7.	Taxes	27
8.	Other Exp. & loss in weight	130
9.	Total cost	1992
10.	Processing cost	192
11.	%of processing cost	9.63%

Based on primary information

Table 4.11 presents economic analysis of processing expenses for pigeonpea. The purchasing price is Rs. 1800, transportation cost Rs. 9, labour charges Rs. 10, light & power charges Rs. 3, office expenses is Rs. 4, depreciation is Rs. 9, taxes are Rs. 27, other expenses and loss in weight is Rs. 130, In this way total cost is Rs. 1992 and processing cost is Rs. 192, The processing cost is 9.63% of total cost.

Table 4.12

Estimates of Processing Expenses for Soyabean.

S.No.	Item	Rs. per qtl.
1.	Purchasing price	950
2.	Transportation cost	9
3.	Labour charges	10
4.	Light & power	3
5.	Office expenses	4
6.	Depreciation	9
7.	Taxes	14
8.	Other Exp. & loss in weight	45
9.	Total cost	1044
10.	Processing cost	94
11.	%of processing cost	9.89%

Based on primary information

Table 4.11 presents economic analysis of processing expenses for Soyabean.. The purchasing price is Rs. 950, transportation cost Rs. 9, labour charges Rs. 10, light & power charges Rs. 3, office expenses is Rs. 4, depreciation is Rs. 9, taxes are Rs. 14, other expenses and loss in weight is Rs. 45, In this way total cost is Rs. 1044 and processing cost is Rs. 94, The processing cost is 9.89% of total cost.

Table 4.13

Estimates of Processing Expenses for Pea.

S.No.	Item	Rs. per qtl.
1.	Purchasing price	950
2.	Transportation cost	9
3.	Labour charges	10
4.	Light & power	3
5.	Office expenses	4
6.	Depreciation	9
7.	Taxes	10
8.	Other Exp. & loss in weight	45
9.	Total cost	1040
10.	Processing cost	90
11.	%of processing cost	8.65%

Based on primary information

Table 4.13 presents economic analysis of processing expenses for Pea.. The purchasing price is Rs. 950, transportation cost Rs. 9, labour charges Rs. 10, light & power charges Rs. 3, office expenses is Rs. 4, depreciation is Rs. 9, taxes are Rs. 10, other expenses and loss in weight is Rs. 45, In this way total cost is Rs. 1040 and processing cost is Rs. 94, The processing cost is 8.65% of total cost.

Table 4.14

Estimates of Processing Expenses for Gram.

S.No.	Item	Rs. per qtl.
1.	Purchasing price	1055
2.	Transportation cost	9
3.	Labour charges	10
4.	Light & power	3
5.	Office expenses	4
6.	Depreciation	9
7.	Taxes	16
8.	Other Exp. & loss in weight	56
9.	Total cost	1162
10.	Processing cost	107
11.	%of processing cost	10.14%

Based on primary information

Table 4.11 presents economic analysis of processing expenses for Gram. The purchasing price is Rs. 1055, transportation cost Rs. 9, labour charges Rs. 10, light & power charges Rs. 3, office expenses is Rs. 4, depreciation is Rs. 9, taxes are Rs. 16, other expenses and loss in weight is Rs. 56, In this way total cost is Rs. 1162 and processing cost is Rs. 107, The processing cost is 10.14% of total cost.

Table 4.15

Estimates of Processing Expenses for Lentil.

S.No.	Item	Rs. per qtl.
1.	Purchasing price	1045
2.	Transportation cost	9
3.	Labour charges	10
4.	Light & power	3
5.	Office expenses	4
6.	Depreciation	9
7.	Taxes	15
8.	Other Exp. & loss in weight	55
9.	Total cost	1150
10.	Processing cost	105
11.	%of processing cost	9.13%

Based on primary information

Table 4.11 presents economic analysis of processing expenses for lentil.. The purchasing price is Rs. 1045, transportation cost Rs. 9, labour charges Rs. 10, light & power charges Rs. 3, office expenses is Rs. 4, depreciation is Rs. 9, taxes are Rs. 15, other expenses and loss in weight is Rs. 55, In this way total cost is Rs. 1150 and processing cost is Rs. 105, The processing cost is 9.13% of total cost.

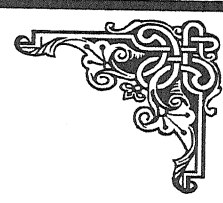
Table 4.16

Percentage share of processing cost in pulses

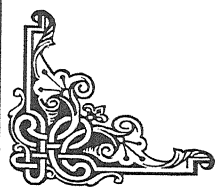
S.No.	Pulses	% share of pro. cost
1.	Black Gram	9.17%
2.	Green gram	9.29%
3.	Pigeon Pea	9.63%
4.	Soyabean	9.89%
5.	Pea	8.65%
6.	Gram	10.14%
7.	Lentil	9.13%

Based on primary information

Table 4.16 presents information of percentage share of processing cost in pulses. The percentage share of processing cost is in following way-9.17% for blackgram, 9.29% for green gram, 9.63% for pigeon pea, 9.89% for soya bean, 8.65% for pea, 10.14% for gram and 9.13 for lentil. In this way lower percentage share is 8.65% for pea and highest percentage share is 10.14% for Gram.



Chapter - 5



CHAPTER-5

Bundelkhand is a agricultural predominant region. Its area and pulse production is depend on natures mercy and monsoon. Bundelkhand is a backward and agro-based region. Its agriculture is a back ward, based on age old labour intensive technology. This chapter explain change in area, production and productivity of pulses in the region. Growth and decline trends are analysed on basis of statistical data in tabular presentation and real factual studies observed in the region. finding methodology is based on observation an questionaries. The finding having cause- result-effect relationship to understand mentioned facts. The study is showing trend of area. Production and yield of pulses in the region. The study presents statistical data of fluctuation in the time period of 1988-89 to 1992-93.

This chapter also contains detail analysis of annual average price in local mandies eg. Ait, Konch and Orai for micro behaviour at mandi level, studying of arrival and average prices of pulses in Jalaun Distt., Bundelkhand Region, and U.P. in different year showing percentage of changes and comparision of these figure rationally to discuss and explain causal result relationship and showing rationalation for changing pattern in production and marketing trends of pulses in study area.

Table 5.1

Bundelkhand Region (U.P.)

Area production and productivity of pulses in BKD Region,
1988-89 to 1992-93

Table 5.1 Presents analysis of pulses area, production and yield in Bundelkhand Region (U.P.) in study period of 1980-81 to 1992-93. In case of Blackgram 3078 Ha. Area was under crop. Produced 6496. Ton at the productivity rate of 2.11 Qtl/ Hec. In the year 1980-81. Area of 40399 ha. was under crop, produced 13170 M. Ton at the productivity rate of 3.26 Qtl/ha in the year. 1984-85. It had showed growth trend

Table - 5.1

Bundelkhand Region (U.P.)
Area Production and Productivity of Pulses in BKD Region,

1988-89 to 1992-93

Crop	Area (ha)					Production (m. Ton)					
	1980-81	1984-85	1988-89	1989-90	1990-91	1991-92	1992-93	1980-81	1984-85	1988-89	1989-90
Black gram	30785	40399 +31.23%	49427 +22.34%	54204 +9.66%	62749 +15.76%	49310 -26.20%	69742 +50.60%	6496	13170 +102.74%	14581 +10.71	14472 -12.73%
Green gram	4641	6449 +38.96%	7643 +18.51%	8717 +14.05%	11092 +27.24%	10731 -3.25%	16445 +53.25%	1035	1264 +22.12%	1850 +46.36%	1874 +1.30%
Gram	533963	552407 +3.45%	586380 +6.15%	582278 -0.70%	577026 -0.20%	497692 -1.38%	482032 -3.15%	378628	435902 +15.07%	382517 -12.21%	383931 +0.37%
Pea	3658	7845 +114.46%	42604 +443.07%	73805 +73.23%	99370 +34.64%	107478 +8.16%	146346 +36.16%	3572	8497 +137.87%	65450 +564.35%	73879 +30.87%
Pigeonpea	95733	97349 +1.69%	71336 +26.72%	75237 +5.47%	73117 -2.82%	66135 -9.55%	68763 +3.97%	116699	16150 +38.39%	90816 -43.77%	110390 +21.55%
Lentil	101285	145763 +43.091%	175655 +20.51%	179527 +2.20%	182332 +1.56%	206392 13.19%	2006.91 +2.76%	70528	10114 +43.41%	155589 +53.83%	155532 -0.04%
Other, pulses	-	-	-	-	-	-	-	-	-	-	-
Total pulses	773296	852217 +10.20%	935119 +9.73%	974645 +4.23%	1007943 +3.42%	1000127 -0.17%	985630 -1.45%	578040	722183 +24.94%	702597 -2.71%	740279 +5.36%

Table 5.1

Production (g/ha)

1990-91	1991-92	1992-93	1980-81	1984-85	1988-89	1989-90	1990-91	1991-92	1992-93
16315 +12.73%	14078 -13.71%	28246 +100.63%	2.11	3.26 +54.50%	2.95 -9.51%	2.67 -9.49%	2.60 -2.62%	3.04 +16.92%	4.05 +33.22%
2562 +36.71%	2275 -11.20%	4259 +87.21%	2.32	1.6 -12.11%	2.42 +23.47%	2.15 -11.16%	2.31 +7.44%	2.12 -8.22%	2.59 +22.17%
443271 +15.45%	322692 -27.20%	368362 +14.15%	7.09	7.89 11.28%	6.52 -17.36%	6.59 +1.07%	7.68 +16.54%	6.48 -15.62%	7.64 +17.90
154930 +109.70%	142086 -8.29%	17034 +19.89%	9.76	10.83 +10.96%	13.52 +24.84%	10.01 -25.96%	15.59 +55.74%	13.22 -15.20%	11.64 -11.99%
102332 -7.30%	60655 -4.07%	91813 +51.37%	12.19	15.59 +36.09	12.73 -23.27%	14.67 +15.22%	14.00 -4.57%	9.17 -34.50%	13.35 +45.58%
173193 +11.35%	170837 -1.36%	122440 -0.94%	6.96	6.94 0.29%	8.86 +27.66%	8.66 -2.25%	9.50 +9.70	8.28 -12.84%	8.59 +3.74%
-	-	-	-	-	-	-	-	-	-
893563 +20.71%	1257471 +40.72%	836325 -33.49%	7.48	8.47 +1.20%	7.51 -11.33%	7.60 +1.20%	8.87 +16.71%	12.57 -41.71%	8.49 -32.46%

31.23%, 102.74% and 54.50% respectively. It was result of increase in area and productivity. Area of 49427 ha, was under crop, producted 14581 M.Ton at the productivity rate of 2.95 qtl./ha. It showed increase in area and production but negative trend in case of yield in the year of 1988-89. Area of 54204 ha. was under crop, produces 14472M.Ton at the productivity rate of 2.67 qtl./ha. it showed increase of 9.66% in area but negative trend of 0.75 and 9.49% in case of production and productivity. in 1989-90. it was result of minimum input and out-dated technology. Area of 62749 hs. was under crop, produced 16315 M.Ton. at the productivity rated of 2.60 qtl/ha. It showed 15.76% and 12.37% increase. In case of area and production and 2.62% negative trend in case of yield in 1990-91, resulted by unfavourable climate. Area of 46310 ha. was under crop. produced 14078 M.Ton of the rate of 3.04 qtl/ha. It showed nenative trend of 26.20% in case of area. Increase in case of yield at 16.92% for the period of 1991-92. It was result of optimum inputs. Area of 69742 ha/wp under crop. produced 28246 M.Ton at the yield rate of 4.05 qtl/ha. It showed positive trend of 506%, 100.63% and 33.22% respectively in area, production and yield in 1992-93. It was result of increase in area and yield.

In case of Greengram 4641 ha. area was under crop. Produced 1035 m.Ton of the productivity rate of 2.23qtl/ha. In the year 1980-81. Area of 6449 ha. was under crop-produced 1264 M.Ton at the rate of 2.42 qtl/ha. In the year 1984-85. It showed growth rate of 38.36% and 22.12% in area under production but showed negative trend of 12.11% in productivity, it was result of low rate of yield. Area of 7643 ha. was under crop produced 1850 M.Ton at the productivity rate of 2.42 qtl/ha. In the year 1988-89. It showed increase of 18.51%, 46.36% & 23.47% respectively in area, production and yield. It was result of increase trend. Area of 8717 ha. was under Crop, produced 1874 M.Ton at the productivity rate of 2.15 qtl/ha. In the year 1989-90. It showed increase of 14.05 and 1.30%. In area and production and negative trend 11.16%. In yield it was result of unfavourable climate. Area of 11092 ha. was under crop, produced 2562 M.Ton at the productivity rate of 2.31 qtl/ha. In the year of 1990-91. It showed increase of 27.24%, 36.71% and 7.44%

production and productivity.

In case of pea, area of 3658 ha. was under crop produced 3572 M. Ton at the productivity rate of 9.76 qtl/ha. In the year of 1980-81. It was area of 7845ha. was under crop. produced 8497 M.Ton at the productivity rate of 10.83 qtl/ha. In the year 1984-85. it showed increase of 114.46%, 137.87% and 10.26% respectively. In case of area, production and yield. It was result of favourable agro-climate. It was area of 42604 ha. was under crop, produced 56450 M.Ton at the productivity of 13.52 qtl/ha. In the year 1988-89. It showed increase of 44307%, 564.35% and 24.84%. In case of area, production and yield. It was result of higher change in area and production it was area of 73805 ha was under croop, produced 73879 M.Ton at the productivity rate of 10.01qtl/ha in the year of 1989-90. it showed increase of 73.23% and 30.87% in case of area and production but decrease of 25.96% in yield. it was result of low level of inputs. It was area of 99370 ha was under crop produced 154930 M.Ton at the productivity rate of 15.59 qtl/has. it showed increase of 34.64%, 109.70% and 55.74% respectively in area, production and yield. it was result of higher productivity. It was area of 107478 ha was under crop, produced 14286 M.Ton at the productivity rate of 13.22 qtl/ha. In the year of 1991-92. It showed increase of 8.16%. In area and decline of 8.29 and 15.2% in production and yield. It was result of low quantity of fertilizer. It was area of 14634 ha. was under crop, produced 170343 M.ton at the productivity rate of 11.64qtl/ha in the year of 1992-93. It showed increase of 36.16% and 19.89% in area and production and decline of 11.95% in yield. It was result of low rate of productivity.

In case of Pigeonpea, area of 95733 ha was under crop. Produced 116699 M.Ton at the productivity rate of 12.19qtl/ha. In the year of 1980-81. It was area of 97349 ha was under crop, produced 161502 M.Ton at the productivity rate of 16.59qtl/ha in the year of 1984-85, it showed increase of 1.69% 38.39% and 36.09% respectively in case of area, production and yield. It was result of growth in area and yield. It was area of 71336 ha. was under crop produced 90816 M.Ton

at the productivity rate of 12.73 qtl/ha in the year of 1988-89. It showed negative trend of 26.72%, 43.77% and 23.27% respectively in case of area, production and yield. it was result of decrease in area production and yield. It was area of 75237 ha was under crop, produced 110390 M.Ton at the productivity rate of 14.67 qtl/ha in the year of 1989-90. it showed increase of 5.47%, 21.55% and 15.24% respectively in case of area, production and yield. it was result of updated technology. It was area of 73117ha was under crop, produced- 102332 M.Ton at the productivity of 14.00 qtl/has in the year of 1990-91. It showed negative trend of 2.82%, 7.30% and 4.57% respectively in case of area production and yield. It was result of unfavourable climate. It was area fo 66135 ha. was under crop produced 60655 M.Ton at the productivity rate of 9.17 qtl/ha in the year of 1991-92. it showed negative trend of 9.55%, 407% and 34.50% respectively in case of area, production and yield, it was result of simple way of farming and low productivity. it was area of 68763 ha, was under crop, produced- 91813 M. Ton at the productivity of 13.35 qtl/ha in the year of 1992-93. It showed growth trend of 3.75% 51.37% and 45.58% respectively in case of area, production and yield. It was result of updated technology.

In case of Lentil, it was area of 101285 ha under crop. Produced 70528M. Ton at the productivity rate 6.69qtl/ha in the year of 1980-81. it was area of 145763 ha under crop, produced 101144 M.Ton at the productivity of 6.94 qtl/ha in the year of 1984-1985, it showed increase of 43.91% and 43.41% in case of area and production and decline of 0.29% in case of yield. It was result of unfavourable climate. it was area of 175655 ha, under crop, produced 155589 M.Ton at the productivity rate of 8.86qtl/- ha in the year of 1988-89. it showed increase of 20.51%, 53.83% and 27.66% respectively in case of area production and yield, it was result of growth trend in area, production and yield. it was area of 179527ha under crop, productivity rate of 8.66qtl/ha in the year of 1989-90. it showed increase of 2.20% in area but decline of 0.04% and 2.25% in production and yield. it was result low level of inputs. It was area of 182332 ha under crop, produced and yield. It was result of updated technology. it was area of 206392

ha under crop, produced 170837 M.Ton at the productivity rate of 8.28% qtl/ha in the year of 1991-92. It showed increase of 13.19% in area and decrease of 1.36% and 12.84% in case of production and yield. It was result of low use of inputs. It was area of 200691 ha, under crop, produced 1724 40M.Ton at the productivity of 8.59 qtl/ha in the year of 1992-93. it showed decrease of 2.76% and 0.94% in case of area and production but increase of 3.47% in case of yield. It was result of advanced and scientific farming.

In case of total pulses, it was area of 773296 ha under pulses, produced 578040 M.Ton at the productivity rate of 7.48 qtl/ha in the year of 1980-81. It was area of 852217 ha, under pulses, produced 722183 M.Ton at the productivity of 8.47 qtl/ha in the year of 1984-85. It showed increase of 10.20% 24.94% and 1.20% respectively in case of area, production and yield. It was result of optimum inputs, it was area of 935119ha under pulses, produced 702596M.Ton at the productivity rate of 7.51 qtl/ha in the year of 1988-89. In showed increase of 9.73% in case of area, but decrease of 2.71% and 11.33% in case of production and yield. It was result of unfavourable climate. It was area of 974645 ha, under pulses, produced 740279M.Ton at the productivity rate of 7.60qtl/ha in the year of 1989-90. it showed increase of 4.23%, 5.36% and 1.20% respectively in case of area, production and yield. It was result of scientific farming and optimum inputs, it was area of 1007943 ha under pulses, produced 893563 M.Ton at the productivity rate of 8.87 qtl/ha in the year of 1990-91. It showed increase of 3.42%, 2071% and 16.71% respectively in case of area, production and yield. It was result of HYV seed and optimum use of fertilizer. it was area of 1000127 ha under pulses, produced 1257471 M.Ton at the productivity rate of 12.57 qtl/ha in the year of 1991-92. it showed negative frend of 0.17% and 41.71% in case of area and yield but increase of 40.72% in case of production it was result of updated technology. it was area of 985630 ha under pulses produced 836325 M.Ton at the productivity rate of 8.49qtl/ha in the year of 1992-93 it showed negative trend of 1.45%, 33.49% and 32.46% respectively in area production and yield. it was result of low quantity of inputs.

Table - 5.2

Distt-Jalaun
Area Production and dproductivity of Pulses in Jalaun Distt.

1988-99 to 1992-93

Crops	A				(Ha)		P r o d u c t i o n		
	1988-89	1989-90	1990-91	1991-92	1992-93	1992-93	1988-89	1989-90	1990-91
Blackgreen	7715	8663 +12.29%	9228 +9.98	6205 -34.87	10133 +63.30%		3372	2538 -24.73%	2525 0.51%
Ggreengram	256	261 +1.95%	335 +28.35%	358 +6.86%	786 +19.55%		95	59 -37.89%	87 47.45%
Gram	86956	90815 +4.44%	88203 -2.88%	76924 -12.79%	72876 -5.26%		73725	71669 -2.75%	8240 9.17%
Pea	18366	36765 +100.17%	43772 +19.06%	45398\$ +3.71%	59490 +31.04%		24335	36802 +51.23%	8246 85.44%
Pigeon pea	11184	10578 -5.42%	10470 -1.68%	9407 -10.15%	9812 +4.30		17401	21077 +21.12%	9898 53.04%
Lentil	83764	79113 -5.55%	73942 -6.53%	75347 +1.90%	65858 -12.59%		86235	77283 -10.27%	900 0.61%
Other pulses	14	24 +71.43%		1			2	7 +25.0%	3 57.14%
Total pulses	208255	226219 +8.62%	226250 +0.01%	213640 +5.57%	218955 +2.49%		205165	209525 +2.12%	235899 +12.59%

Table 5.2

<u>Production</u>	(M. Ton)	Productivity				qtl/ha	
		1988-89	1989-90	1990-91	1991-92	1992-93	
1991-92	1992-93						
1498 -40.67%	3800 +153.67%	9.17	2.93 -68.05%	2.65 -9.56%	2.41 -9.06%	3.75 +55.60	
85 -2.30%	223 +162.35%	6.56	4.47 -31.86%	2.55 -42.95%	2.33 -8.63%	2.88 +23.60%	
60988 -22.05%	65146 +6.82%	9.48	7.89 -16.77%	8.87 +12.42%	9.10 +2.59%	8.94 -1.76%	
67507 -1.08%	72799 +7.84%	13.25	10.10 24.45%	15.59 +55.74%	14.87 -4.62%	12.24 -17.69%	
10862 +9.74%	14955 +37.68%	15.56	19.03 +23.30%	9.55 49.81%	11.55 -20.94%	15.24 -31.95%	
76929 +0.04%	62236 -19.10%	10.07	9.78 2.88%	10.40 +6.34	10.21 -1.83%	9.45 -7.44%	
3		1.46	2.81 +92.46%				
217869 -7.64%	219459 +0.59%						

Table 5.2 presents analysis of area, production and yield of pulses, in jalaun distt in the period of 1988-89 to 1992-93. In case of Blackgram, it was area of 7715 ha under crop, produced 3372M.Ton at the productivity rate of 9.17qtl/ha in the year of 1988-89. it was area of 8663 ha under crop produced 2538M.Ton at this productivity rate of 2.93 qtl/ha in the year of 1989-90, it showed increase of 12.29% in area and decreases of 24.73% and 68.05 in case of production and productivity. it was result of low quantity of inputs. It was area of 9528 ha under crop, produced 2525M.Ton at the productivity of 2.65qtl/ha in the year of 1990-91. it showed decrease of 0.51% and 9.56% in case of production and productivity but increase of 9.98% in case of area. it was area of 6205 ha under crop. Produced 1498 M.Ton at the productivity rate of 2.41qtl/ha in the year of 1991-92, it showed negative trend of 34.87%, 40.67% and 9.06% in case of area, production and yield, it was result of green revolution and shifting toward foodgrains. It was area of 10133ha under crop produced 3800M.Ton at the productivity rate of 3.75 qtl/ha in the year of 1992-93. It showed positive trend of 63.30%, 153.67% and 55.60% in case of area, production and yield. it was result of higher proportion of area.

In case of Greengram, it was area of 256 ha under crop produced 95M.ton at the productivity rate of 6.56qtl/ha in the year of 1988-89, it was area of 261 ha. under crop produced 59M.Ton at the productivity rate of 4.47qtl/ha in the year of 1989-90. It showed positive trend of 1.95% in area and negative trend of 37.89% and 31.86% in case of production and yield. it was result of shifting toward foodgrain and low productivity. It was area of 335 ha under crop, produced 87M.ton at the productivity of 2.55qtl/ha in the year of 1990-91. it showed positive trend of 28.35% and 47.45% in case of area & production but negative trend of 42.95% in case of yield. it was result of low level of productivity. it was area of 358ha under crop produced 85M.Ton at the productivity rate of 2.33qtl/ha in the year of 1991-92. it showed increase of 6.68% in case of area but decrease of 2.30% and 8.63% in case of production and yield. it was result of unfavourable agro-climate. It was area of 786ha under crop produced 223M.Ton at the productivity rate of 2.88

qtl/ha in the year of 1992-93. it showed increase of 19.55% 162.35% and 23.60% respectively in area, production and yield. It was result of advanced and scientific way of farming.

In case of Gram, it was area 86956 under crop, produced 73725M.Ton at the rate of 9.48qtl/ha in the year of 1988-89. It was area of 90815ha under crop produced 71669 M.ton at the rate of 7.89qtl/ha in the year of 1989-90. it showed increase of 4.44% in area and decrease of 2.75% and 16.77% in case of production and productivity. it was result of low productivity. It was area of 88203 ha under crop, produced 78240M.Ton at the productivity of 8.87 qtl/ha in the year of 1990-91. it showed negative trend of 2.88% in area and positivie trend of 9.17% and 12.47% in case of production and productivity. it was result of HYV seeds and higher production. It was area of 76924ha, under crop produced 60988M.Ton at the productivity rate of 9.10qtl/ha in the year of 1991-92. it showed negative trend of 12.79% and 22.05% in case of productivity. It was result of optimum use of inputs. It was area of 72876ha, under crop, produced 65146M.Ton at the productivity rate of 8.94qtl/ha in the year 1992-93. it showed positive trend of 6.82% in production but negative trend of 7.5.26% and 1.76% in case of area and productivity it was result of higher production.

In case of Pea. It was area of 18366 ha, under crop produced 24335M.Ton at the productivity of 13.25 qtl/ha. In the year of 1988-89. It was area of 36765 ha under crop, produced 36802 M.ton at the producitivty of 10.01 qtl/ha in the year of 1989-90. It showed positive trend of 100.67% and 51.23% in case of area and production but negative trend of 24.45% in case of productivity. It was result of unfavourable climate. It was area of 43772 ha under crop. produced 68246M.Ton at the productivity rate of 15.59 qtl/ha in the year of 1990-91. It showed increase of 19.06%, 85.44% and 55.74% respectively in area, production and yield, it was result of updated technology and higher productivity. It was area of 45398 ha, under crop produced 67507 M.Ton at the productivity of 14.87 qtl/ha in the year of 1991-92. It showed increase of 3.71% in area and decrease of 1.08% and 4.62% in case of production

and yield. It was result of low productivity. It was area of 59490ha. Under crop produced 72799 M.Ton at the productivity of 12.24qtl/ha in 1992-93 it showed increase of 31.04% and 7.84%. In area and production but decrease of 17.69% in productivity. It was result of unfavourable climate.

In the case of Pigeonpea, it was area of 11184 ha under crop produced 17401M.Ton at the productivity rate of 15.56qtl/ha in the year of 1988-89. It was area of 10578 ha under crop, produced 21077 M.Ton at the productivity rate of 19.03 qtl/ha in the year 1989-90. It showed negative trend of 5.24% in area, but positive trend of 21.12% and 22.30% in case of production and productivity. It was result of better technology. It was area of 10470 ha under crop. Produced 9818M.Ton at the productivity rate of 9.55 qtl/ha in the year 1990-91. It showed negative trend of 1.68%, 53.04% and 49.81% in area, production and yield it was result of unfavourable climate. It was area of 9407ha. under crop produced 10862M.Ton at the productivity rate of 11.55qtl/ha in the year 1991-92. It showed positive trend of 9.47% in production but negative trend of 10.15% and 20.94% in case of area and yield. It was result, of low level of inputs and outdated technology. It was area of 9812ha. under crop, produced 14955M.Ton at the yield of 15.24 qtl/ha in the year of 1992-93. it showed positive trend of 4.30% and 37.68% in case of area and production but negative rate of 34.95% in case of yield. It was result of poor productivity.

In case of lentil, it was area of 83764ha under crop produced 86235M.Ton at the productivity rate of 10.07 qtl/ha in the year 1988-89. It was area of 79113 ha under crop, produced 77373M.Ton at the rate of 9.78qtl/ha in the year of 1989-90. It case of area, production and yield, it was result of HYV seeds and failure of agro climate. It was area of 73942ha under crop, produced 76900M.Ton at the productivity rate of 10.40qtl/ha in 1990-91. It showed negative trend 6.53 and 0.61%. In area and production but positive trend of 6.34%. In case of yield. It was result of low use of fertilizer. It was area of 75347ha under crop, produced 76929M.Ton at the productivity rate of 10.21 qtl/ha in

Table 5.3

Arrival Annual Average Price of Pulses In U.P. in the Following Years,

Crop.	1988-89	1989-90	1990-91	1991-92	1992-93
Blackgram	1117246	325084 -70.90%	219112 -32.60%	2433221 +11.04%	294816 +21.15%
Green gram	349631	131725 -62.22%	174018 +32.11%	219189 +25.96%	23942 +5.82%
Gram	1581616	4056734 +156.49%	3708297 -8.59%	431531 +18.15%	3636184 -17.01%
Pea	3582251	2065564 -42.33%	1953656 -3.48%	2950910 +48.01%	2230395 -24.42%
Pigeonpea	1631543	2868737 +75.83%	2462831 -14.15%	2323084 -5.67%	2948157 26.91%
Lentil	3265260	1982852 -39.27%	2051102 +3.44%	2524871 +23.10%	237256 -6.04%
Total	11527547	11430696 -0.84%	106++016 -7.53%	12642913 +19.62%	12240508 -3.18%

Source ?

Table 5.3

(A-Price Index)

1988-99	1989-90	1990-91	1991-92	1992-93
637.91	723.42 +13.40%	812.47 +12.31%	863.50 +6.28%	868.50 -0.58%
687.55	733.58 +6.69%	753.85 +2.76%	838.25 +11.19%	1019.41 +21.61%
516.57	576.60 +11.62%	578.58 +0.34%	584.95 +1.10%	734.91 +25.64%
570.01	608.83 6.81%	768.08 +26.15%	941.41 +22.57%	844.83 10.26
582.93	599.08 2.7%	680.08 +2.79%	785.75 +15.40%	785.66 -0.01%

the year of 1991-92. It showed positive trend of 1.90% and 0.04% in area and production but negative trend of 1.83% in case of yield. It was result of simple way of farming and outdated technology. It was area of 65858ha under crop produced 62226 M.Ton at the productivity rate of 9.45qtl/ha in the year of 1992-93. It showed negative trend of 12.59%, 19.10% and 7.44% in case of area, production & yield. It was result of low quantity inputs and monsoon failures.

Table 5.3 presents figures of annual arrival and average prices of pulses in for the period of 1988-89 to 1992-93 Arrial and average price of BlackGram was 1117246 qtl/ha & Rs. 637.91 per qtl in the year 1988-89. it decrease in arrival in the year 1989-90. Its arrival was 325084 and average price hiked at Rs. 723.42 per qtl at the rate of 13.40% inthe year 1989-90. Further it decreased in arrival in the year 1990-91. Its arrival was 299112 qtl. It increased at the rate of 32.60% and its average price was Rs. 812.47 per qtl hiked at the rate of 12.31% in the year 1990-91. Its arrival was 243322 qtl in the year 1991-92. Increased at the rate of 11.04% in the year 1991-92 its average price was Rs. 863.50 per qtl liked at the rate of 6.28%. in the year 1991-92. Its arrival was 294816 qtl hiked at the rate of 21.16% in the year 1992-93 its average price was Rs. 858.50 and lowered at the rate of 0.58% in the year 1992-93.

Greengrass arrival was 349631 qtl and average price was Rs. 687.55 per qtl in the year 1988-89. It was 131725 qtl in 1989-90 and decreased at the rate of 62.32% in the year 1989-90. Its average price was Rs. 733.58 in the year 1989-90 and hiked at the rate of 6.67% in the year 1989-90 its arrival was 1740.18 qtl increased at the rate 32.11% in the year 1990-91. Its average price was Rs. 753.85 per qtl. and hiked at the rate of 2.76% in the year 1990-91 its arrival was 219189 qtl and increased at the rate of 25.96% in the year 1991-92. Its average price was Rs. 838.25 per qtl hiked at the rate of 11.19% in the year 1991-92 its average arrival was 231942 qtl increased at the rate of 5.82% in the year 1992-93. Its average price was Rs. 1992.41 per qtl hiked at the rate of 21.61% in the year 1992-93.

Arrival of Gram was 1581669 in the year 1988-89. It reached at 40567349 and increased at the rate of 156.49% in the year 1989-90. its arrival was 37082979 and decreased at the rate of 8.59% in the year 1990-91 its arrival was 438153qtl and increased at the rate of 18.15% in the year of 1991-92 its arrival was 3636184q and decreased at the rate of 17.01% in the year 1992-93. Annual average price for Gram was Rs. 632.28 in the year 1988-89 it increase at the rate of 1.72% and reached at Rs. 644.44 in the year 1989-90 it was hiked at the rate of 9.65% and reached at Rs. 706.66 in the year 1990-91. It was Rs. 675.36 and lowered at the rate of 4.43% in the year of 1991-92. It further hiked at the rate of 12.09% and reached at Rs. 757.00 in the year 1992-93.

Arrival of pea was 358221q in the year 1988-89. It decreased at 2065564q at the rate of 42.33% in the year 1989-90. It further lower at the rate of 3.48% reached at 195365669 in the year 1991-92. It was 2230395 q and decreased at the rate of 24.42% in the year of 1992-93. Annual price for per was Rs. 567.57 in the year 1988-89 it hiked at the rate of 11.62% and reached at Rs. 576.60 for the year 1989-90 it reached at Rs. 578.58 and hiked at the rate of 0.34% in the year 1990-91 it further reached at Rs. 584.95 was hiked at the rate of 1.10% in the year 1991-92 it hiked at the rate of 25.65% and reached at Rs. 734.91 for the year 1992-93.

In case of Pigeon pea arrival was 1631543q in the year 1988-89. It reached at 2868737% at the rate of 75.83% the year 1989-90. it reached at 2462831q and decreased at the rate of 14.15% on the year 1990-91. It again decreased at the rate of 5.67% and reached at 2323084q in the year 1991-92. It reached at 2948157q and increased at the rate of 26.91% in the year 1992-93.

Annual average price for pigeonpera was Rs. 570.10 in the year 1988-89. It increased at the rate of 6.81% and reached at Rs. 608.83 for the year 1989-90. Again it increased at the rate of 26.15% &

Table 5.4

KONCH MANDI

Annual Arrival and Annual Average price of pulses in Konch Mandi in following year

Crop.	A r r i v a l i n q t l		A v e r a g e p r i c e		R s. p e r Q t l	
	1994-95	1995-96	1996-97	1994-95	1995-96	1996-97
Blace	833	857 +2.88%	2934 +242.35%	763.33 -	175.00 +53.93%	1043.75 -11.17%
Green Gram	-	-	1	-	-	1600.00
Gram	64273	114207 +77.69%	44304 -61.20%	989.58	06.25 28.63%	957.78 +35.61%
Pea	320599	320901 +0.09%	186728 -41.81%	720.42	730.00 +1.33%	1006.00 +37.86%
Pigeonpea	1903	931 51.07%	174 -81.31%	1020.00	1357.14 33.05%	1233.00 -9.15%
Lentil	31675	68133 +115.10%	68894 +1.12%	983.33	29.16 25.00%	1343.64 +9.31%
Soybean	3663	13466 +267.72%	26654 +97.93%	792.85	762.22 -3.86%	888.50 +16.57%
Total	422946	518495 +22.59%	329689 -36.41%			

Table 5.4

KONCH MANDI

Annual Arrival and Annual Average price of pulses in Konch Mandi in following year

Crop.	A r r i v a l i n q t l		A v e r a g e p r i c e		R s . p e r Q t l	
	1994-95	1995-96	1996-97	1994-95	1995-96	1996-97
Blace	833	857 +2.88%	2934 +242.35%	763.33 -	175.00 +53.93%	1043.75 -11.17%
Green Gram	-	-	1	-	-	1600.00
Gram	64273	114207 +77.69%	44304 -61.20%	989.58	06.25 28.63%	957.78 +35.61%
Pea	320599	320901 +0.09%	186728 -41.81%	720.42	730.00 +1.33%	1006.00 +37.86%
Pigeonpea	1903	931 51.07%	174 -81.31%	1020.00	1357.14 33.05%	1233.00 -9.15%
Lentil	31675	68133 +115.10%	68894 +1.12%	983.33	29.16 25.00%	1343.64 +9.31%
Soybean	3663	13466 +267.72%	26654 +97.93%	792.85	762.22 -3.86%	888.50 +16.57%
Total	422946	518495 +22.59%	329689 -36.41%			

reached at Rs. 768.08 for the year 1990-91 and. It further increased at the rate of 22.57% and reached at Rs. 941.41 for the year 1991-92. It further lowered at the rate of 10.26% and reached at Rs. 844.83% for the year 1992-93.

In case of Lentil, arrival was 3265260q in the year 1988-89 it decreased at the rate of 39.72% and reached at 1982852q for the year 1989-90. It increased at the rate of 23.10% and reached at 2524871q for the year 1991-92. It further decreased at the rate of 6.04% and reached at 2372256q in the year 1992-93. Its annual average price for as Rs. 582.83 for the year 1988-89. It hiked at the rate of 2.79% and reached at 599.08 per the year 1989-90. It further hiked at the rate of 13.66% and reached at Rs. 680.90 per the year 1990-91. Again it hiked at the rate of 15.40 percent and reached at Rs. 785.75 per the year 1991-92 it now lowered at the rate of 0.01% and reached at Rs. 785.66 for the year of 1992-93.

Tables 5.4 presents figures of arrival and annual average prices for pulses in the Mandi of konch Arrival of Black gram was 8339 in the year 1994-95. It reached at 857q at the rate of 2.88% in the year 1995-96 it increased at 2934q at the rate of 242.35% in the year of 1996-97, its annual average price was Rs. 763.33 in the year of 1994-95 it increase at Rs. 1175.00 at the rate of 53.92% in the year 1995-96. It reached at Rs. 1043.75 at the rate of lowering at 11.17% for the year of 1996-97. There is negliable position of Green Gram in the konch Mandi.

In case of Gram, arrival was 64273q, in the year 1994-95 it rose up at the rate of 77.69% and reached at 1142079 in the year 1995-96, Then it declined at the rate of 61.20% and reached at 44304q in the year 1996. Its annual average price was Rs. 989.58 for the year 1994-95, it lowered at the rate of 28.63% and reached at Rs. 706.25 in the year 1995-96 further it increased at the rate of 36.61% and reached at Rs. 257.78 in the year of 1996-97.

In case of pea, its arrival was 320599q in the year 1994-95. Then it increase at the rate of 0.09% and reached at 320901q in the year 1995-96, then it lowered at the rate of 41.81% and reached at 186728q in the year 1996-97, its annual price was Rs. 720.42 in the year 1994-95 then it increased at the rate of 1.33% and reached at Rs. 730.00 in the year 1995-96 further it hiked at the rate of 37.86% and touched at Rs. 1006.36 per q in the year 1996-97.

In case of pigeon pea arrival was 1903q in the year 1994-95 then it decreased at the rate of 51.07% and touched 931q in the year 1995-96, further it increased at the rate of 81.31% and was 1749 in the year 1996-97. Its average price was Rs. 1020.00 in the year 1994-95. Then it hiked at the rate of 33.05% and touched at Rs. 1357.14 per q in the year 1995-96. Then decreased at the rate of 9.15% and touched Rs. 1233.00 per qtl in the year 1996-97.

In case of Lentil, arrival was 31675q in the year 1994-95 then it increased at the rate of 115.10 percent and touched at 68133q. In the year 1995-96 further it increased at the rate of 1.12% and touched at 68894q in the year 1996-97. Its average price was Rs. 983.33 per qtl. For the year 1994-95. Then it hiked at the rate of 25.00% and touched Rs. 1229.16 per q. in the year 1995-96 further it increased at the rate of 9.31% and touched Rs. 1343.64 per q for the year 1996-97.

In case of Soyabean, arrival was 3663q. for the year 1994-95 it increase at the rate of 267.72% and touched at 13466q in the year 1995-96 further it increased at the rate of 97.73% and touched at 26654 q for the year 1996-97 its average price was Rs. 792.85 per qtl for the year 1994-95, it lowered at the rate of 3.86% and reached at Rs. 762.22 per q in the year 1995-96 then it lowered at the rate of 16.57% and touched at Rs. 888.50 per qtl. for the year 1996-97.

Total pulses arrival was 422946 qtl in the year 1994-95, 518495q in the year 1995-96 at the rate 22.59% for the year 1995-96. Then it decreases at the rate of 36.41% and touched 329689 of for the - year 1996-97.

Table 5.5

A I T M A N D I*Annual Arrival and Annual Average price of pulses in Ait Mandi in Following years.*

Crop	<u>Arrival in q l t s</u>			
	1990-91	1991-92	1992-93	1993-94
Blackgram	1043	555 -46.79%	1721 +208.47%	183 -89.31%
Greengram	-	15	-	-
Gram	77828	78021 +0.25%	67548 -15.50%	45021 -33.35%
Pea	46528	42875 -7.85%	58379 +36.16%	88508 +51.61%
Pigeonpea	2201	2763 +25.53%	8012 +189.98%	1743 -78.24%
Lentil	138295	193239 +39.73%	149030 -22.88%	90057 -39.57%
Soyabean	298	12 -95.97%	224 +1766.66%	202 -9.82%
			445 +120.30%	
Total	266193	317480 +19.27%	284905 -10.26%	225714 -20.77%
				160082 -29.08%

Table 5.5

Average price Rs. / per qtl

1990-91	1991-92	1992-93	1993-94	1994-95
435.71	662.83	536.83	400.00	-
-	+52.13%	-19.01%	-25.49%	-
646.92	735.00	-	-	-
504.17	597.42	734.92	1096.92	931.33
	-7.65%	+23.01%	+49.26%	-15.09%
	579.92	713.33	790.08	765.25
	+15.02%	+23.0%	+10.76%	+3.14%
	+15.02%	+23.0%	+10.76%	-3.14%
806.00	923.75	812.40	958.83	1078.71
	+14.61%	-12.05%	+18.02%	+12.50%
719.25	704.83	684.91	811.08	1075.58
	-2.00%	-7.08%	+23.85%	+32.61%
511.50	600.00	385.50	625.00	725.0%
	+17.30%	-35.75%	+62.13%	+16.0%

Table 5.5 presents figure of arrival and average prices of pulses in Ait Mandi. It presents datas from 1990-91 to 1994-95. In case of Blackgram arrival was 1043q in the year 1990-91. It decreased at the rate of 46.79% and reached at 555q in the year 1991-92. Then it increased at the rate of 208.47% and touched at 1712q i in the year 1992-93 further it decreased at the rate of 89.31% and it was 183q in the year 1993-94. Its annual average price was Rs. 435.71 for the year 1990-91. Then it hiked at the rate of 52.13% and touched at Rs. 662.83 for the year 1991-92 further it rolled at the rate of 19.01% and 25.49% in the year 1992-93 and 1993-94 it was at Rs. 536.83 and Rs. 400.00 per qtl. For the year 1992-93 and 1993-94 respectively. There is neglible situation of Greengram in Ait Mandi during study period.

In case of gram its arrival was 77828q in the year 1990-91 it hiked at the rate of 0.25% and it was 780.21 qtl in the year 1991-92 then it rolled at the rate of 15.50%, 33.35% and 13.95% for the year 1992-93 1993-94, and 1994-95 respectively and its arrival was 67548 qtl 45021 qtl and 38738 qtl in the year 1992-93-1993-94, and 1994-95 respectively its average price was Rs. 646.92 per qtl for the year 1990-91 and it and it rolled at the rate of 7.65% and reached at Rs. 597.42 per qtl for the year 1991-92 then it hiked at the rate of 23.01% & and it was Rs. 734.92 per qtl for the year 1992-93 further it hiked at the rated 49.26% and it was Rs. 1096.92 per qtl in the year 1993-94 again it rolled at the rate of 15.09% and it was Rs. 931.33 in the year 1994-95.

In case of pea its annual arrival was 46528 qtl in the year 1990-91 it decreased at the rate of 7.85% and reached at 42875 qtl in the year 1991-92. Further it increased at the rate of 36.16% and 0.07% for the year 1992-93, 1993-94 and 1994-95 respectively its annual arrival were 58379qtl 8850qtl and 88583qtl for the year 1992-93, 1993-94 and 1994-95 respectively, Its average prices was Rs. 504.17 per qtl for 1990-91 its rose up at the rate 15,02%, 23.0% and 10.76% for the year 1991-92, 1992-93, 1993-94 and further it rolled at 3.14% in the year 1994-95 its average prices were Rs 579.92, Rs. 713.33 Rs. 790.08 nd

Rs. 765.25 per qtl for the year 1991-92, 1992-93, 1993-94 and 1994-95 respectively.

The arrival of Pigeonpea was 2201qtl in the year 1990-91. It increased at the rate of 25.52% and 189.97% for the year 1991-92 and 1992-93. It was 2763q and 8012q in the year 1991-92 and 1992-93 respectively and it decreased at the rate of 78.24% and 8.32% in the year 1993-94 and 1994-95. Its arrival was 1743q and 1598qtl in the year 1993-94 and 1994-95 respectively. Its annual average price was Rs. 806.00 per qtl for the year 1990-91 it hiked at the rate of 14.61% and was Rs. 923.75 per qtl for the year 1991-92. It rolled at the rate of 12.05% and was Rs. 812.40 per qtl for year 1992-93. Once it hiked at the rate of 18.02% and 12.50% in the year 1993-94 and 1994-95 respectively its average price was Rs. 958.83 per qtl and Rs. 1078.71 per qtl for the year 1993-94 and 1994-95 respectively.

The annual arrival of lentil was 138295qtl in the year 1990-91 it increased at the rate of 39.73% and was 193239qtl in the year 1991-92. Then it decreased at the rate of 22.88%, 39.57% and 65.88% in the year 1992-93, 1993-94 and 1994-95 respectively. The arrival was 149030 qtl 90057 qtl and 30728 qtl in the year 1992-93, 1993-94 and 1994-95, respectively. Its orange price was Rs. 719.25 per qtl for the year 1990-91 it rolled at the rate of 2.00% and 7.08% for the year 1991-92 and 1992-93 respectively. It was Rs. 704.83 per qtl and Rs. 654.91 per qtl for the year 1991-92 and 1992-93 respectively. it was Rs. 704.83 per qtl and Rs. 654.91 per qtl for the year 1991-92 and 1992-93 respectively. Again it rise at the rate of 23.85% and 32.61% for the year 1993-94 and 1994-95 and it was Rs. 811.08 per qtl and Rs. 1075.58 per qtl. for the year 1993-94 and 1994-95 respectively.

The annual arrival of Soyabean was 298q in the year 1990-91. It decreased at the rate of 95.97% and it was 12 qtl in the year 1991-92. It increase at the rate of 1766.66% and it was 224 qtl in the year 1992-93 next time it decreased at the rate of 9.82% and it was 202qtl in the year 1993-94 once it increase at the rate of

Table 5.6

Annual Arrival and Annual Average price of pulses in Orai Mandi in following years

Arrival in qtl

Crop/pulses	199-91	1991-92	1992-93	1994-95	1995-96
Blackgram	10037	5362 -46.58%	11537 +115.16%	4298 -62.74%	8584 +99.72%
Greengram	-	-	-	213	351
Gram	99339	163194 +64.28%	129970 -20.36%	104420 -19.65%	158214 +51.52%
Pea	199695	282179 +41.30%	248735 -11.85%	301335 +21.15%	23329 -20.87%
Pigeonpea	15683	21081 +34.42%	55165 +161.68%	34311 37.80%	3551 +3.61%
Lentil	163927	228109 +39.15%	269683 +18.22%	101093 -62.52%	84148 -16.75%
Soyabean	-	-	-	281625	43722 -84.47%
Total	488681	699925 +43.23%	715090 +2.17%	827285 +15.09%	568999 -31.22%

Table 5.6

Average price Rs./per qtl

1996-97	1994-95	1995-96	1996-97
21771	1305.55	1404.00	2110.00
+153.62%		+7.54%	-13.82%
648	1600.00	1312.43	1337.14
+84.61%		-29.19%	+46.73%
166819	751.50	759.42	105958
-30.03%		+1.05%	+39.52%
29900	1145.83	1470.83	1410.00
-15.89%		+28.36%	-4.13%
115391	1006.25	1304.17	1368.75
+37.13%		+29.61%	+4.95%
242652	815.42	827.27	1001.43
+454.98%		+1.45%	+21.05%
721232			
+26.75%			

120.30% and it was 445 qtl in the year 1994-95, its average price was Rs. 511.50 per qtl for the year 1990-91. It rose at the rate of 17.30% and it was Rs. 600.00 per qtl in the year 1991-92. It rose at the rate of 35.75% and it was 385.50 per qtl for the year 1992-93. Once it hiked at the rate of 62.31% and 16.0% in the year 1993-94 and 1994-95 and its price was Rs. 625.00 and Rs. 725.00 per qtl for the year 1993-94 and 1994-95 respectively. The arrival of total pulses was 2661313 qtl in the year 1990-91 it increased at the rate of 19.27% and it was 317480 qtl in the year 1991-92. It decreased at the rate of 10.26%, 20.77% and 29.08% in the year 1992-93, 1993-94 and 1994-95 and arrival was 284905.00 qtl, 225714 qtl and 1600.82 qtl in the year 1992-93, 1993-94, and 1994-95 respectively.

Table 5.6 presents figures of arrival and annual average prices of pulses in Orai Mandi during study period. It presents figures of annual arrival from 1990-91 to 1996-97 and annual average prices of pulses from 1994-95 to 1996-97. Figures of arrival is not available for the year 1993-94.

Annual arrival of Blackgram was 10037 qtl. in the year 1990-91. It lowered at 46.58% and was 5362 qtl in the year 1991-92. It increased at 115.16% in the year 1992-93 and was 11537 qtl. Again it decreased at 62.74% and was 4298 qtl. in the year 1994-95. Then it hiked at the rate of 99.72% and 153.62% in the year 1995-96 and 1996-97 respectively and it was 8584 qtl and 12771 qtl. in the year 1995-96 and 1996-97 respectively. The annual average price was Rs. 1305.55 per qtl. in the year 1994-95 and it hiked at 7.54% and was Rs. 1404.00 per qtl. in the year 1995-96. Again it rose at 13.83% and was Rs. 1210.00 per qtl. in the year 1996-97.

Annual arrival of Greengram was 213 qtl. in the year 1994-95 and it increased at the rate of 64.79% and 84.61% in the year 1995-96 and 1996-97 respectively and it was 351 qtl and 648 qtl. in the year 1995-96 and 1996-97 respectively. Its average price was Rs. 1600/- per qtl in the year 1994-95. Then it rose at 17.92% and was Rs. 1312.43

per qtl. in the year 1994-95 again it hiked at 1.88% and it was Rs. 1337.14 per qtl. in the year 1996-97.

Annual arrival of Gram was 99339 qtl. in the year 1990-91. It hiked at 64.20% and was 163194 qtl. in the year 1991-92. Then it decreased at 20-30% and was 129970 qtl. in the year 1992-93. Once it decreased at 19.65% and was 104420 qtl. in the year 1994-95. Then it increased at 51.52% and it was 518214 qtl in the year 1995-96. Again it decreased at 8.95% and it was 144051 qtl. in the year 1996-97. Its annual average price was Rs. 1036. 25 per qtl. for the year 1994-95. It rolled at 29.10% and it was Rs. 733.75 per qtl. in the year 1995-96. Then it rose up at 46.73% and it was Rs. 1076.67 per qtl. in the year 1996-97.

Annual arrival of pea was 17995 qtl in the year 1990-91. It rose up at 41.30% and was 282179 qtl in the year 1991-92. Then it decreased at 11.85% and it was 248735 qtl. in the year 1992-93. Once it increased at 21.15% and was 301335 qtl. in the year 1994-95. Once again it decreased at 20.87% and 30.03% in the year 1995-96 and 1996-97 and it was 238429 qtl. and 166819 qtl. in the year 1995-96 and 1996-97 respectively. Its annual average price was Rs. 751.50 per qtl. for the year 1994-95. Then it rose up at 1.05% and 39.52% in the year 1995-96 & 1996-97 and it was Rs. 759.42 per qtl. and 1059.58 per qtl. in the year 1995-96 and 1996-97 respectively.

Annual arrival of pigeon pe was 15683 qtl. in the year 1990-91. It rose up at 34.42% and 16.68% in the year 1991-92 and 1992-93. It was 21081 qtl and 55165 qtl. in the year 1991-92 and 1992-93. respectively. Then it decreased at 37.80% and it was 3411 qtl in the year 1994-95. Once it increased at 3.61% and it was 35551 qtl in the year 1995-96. Once again it decreased at 15.89% and it was 29900 qtl. in the year 1996-97. Its annual average price was Rs. 1145.83 per qtl. in the year 1994-95. it raise at 28.36% and it was Rs. 1470.83 per qtl. in the year 1995-96. Then it rolled at 4.13% and it was Rs. 1410.00 per qtl. in the year 1996-97.

Annual arrival of Lentil was 163927qtl. in the year 1990-91. It increased at 39.15% and 18.22% in the year 1991-92 and 1992-93. it was 228109 qtl. and 2696.83 qtl. in the year 1991-92 and 1992-93 respectively. Then it decreased at 62.52% and 16.75% in the year 1994-95 and 1995-96 and it was 101083qtl. and 84148 qtl in the year 1994-95 and 1995-96 respectively. Once more it increased at 37.13% and it was 115391 qtl. In the year 1996-97. Its annual average price was Rs. 1006.25 per qtl. in the year 1994-95 and it hiked at 29.61% and 4.95% in the year 1995-96 and 1996-97 and it was Rs. 1304.17 per qtl. and Rs. 1368.75 per qtl. in the year 1995-96 and 1996-97 respectively.

Annual average arrival of Soyabean 281625 qtl. in the year 1994-95. It decreased 84.47% and it was 43733qtl. in the year 1995-96. Then it increased at 454.98% and it was 242652 qtl. in the year 1996-97. Its annual average price was Rs. 815.42 per qtl. in the year 1994-95. Then it hiked at 1.45% and 21.05% in the year 1995-96 and 1996-97 and it was Rs. 827.22 per qtl. and Rs. 1001.43 per qtl. in the year 1995-96 and 1996-97 respectively.

Total arrival of pulses was 488681 qtl. in the year 1990-91. It increased at 43.23%, 2.17% and 15.09% in the year 1991-92. 1992-93 and 1994-95 and it was 699925q. 715090q. and 827285 q in the year 1991-92, 1992-93 and 1994-95 respectively. Then it rolled at 31.22% and it was 568997 qtl. in the year 1995-96 and once it hiked at 26.75% and it was 721232q. in the year 1996-97.

Table 5.7
Jalaun Distt
Annual Arrival and Annual Average Price of Pulses
Annual Arrival

Zins.	1993	1994	1995	1996	1997	Total
Black gram	34148	14777	5878	12991	37566	105360
Urd		-56.75%	-60.22%	+121.16%	+189.16%	
Grgnggram	523	25	224	354	367	1493
		-95.21%	+769%	+58.03%	+3.67%	
Gram	361572	284818	259753	438099	320653	1664895
		-21.22%	-8.80%	+68.65%	-26.80%	
Pea	658529	885922	942574	881937	663928	4032890
		+34.53%	+6.39%	-6.43%	-24.91%	
Pig.Pea	108258	101018	62459	54373	50889	376997
		-6.68%	-38.17%	-12.94%	-6.40%	
Lentil	788863	499976	2022295	218430	301228	2020792
		-36.62%	-59.53%	+7.97%	+37.90%	
Total	1951893	1786536	1473183	1606184	1374631	

	Annual Average Price In Rs. Per qtl.				
Blackgram	643	585	1875	1425	992
Urd		-9.02%	+220.5%	-24.0%	-30.38%
Greengram	800	-	1600	1600	-
Gram	882	1016	755	839	1098
		+19.24%	-25.68%	+11.12%	+30.87%
Pea	765	754	762	817	993
		-1.43%	+1.06%	+7.21%	+14.19%
Pigpea	830	915	1583	1470	1041
		+10.24%	73.0%	7.13%	-29.18%
Lentil	638	928	1101	1448	1050
		+45.45%	+18.64%	+31.51%	-27.48%

Table 5.7 presents figures of annual arrival and average prices of pulses in Jalaun distt. From 1993-to-1997. Arrival of Black Gram was 34148q. in the year 1993. It decreased at 56.72% and it was 147771. in the year 1994. it further lowered at 6.022% and it was 5878q. in the year 1995. Then it increased at 121.01% and it was 12991qtl. in the year 1996. Again it increased at 189.16% and it was 37566q in the year 1997. In this way total arrival of Black Gram was 105360q. in Jalaun distt. from 1973 to 1997.

The annual arrival of Greengram was 523q. in the year 1993. it decreased in next year as it was 25q. in the year 1994. Again it increased at the rate of 796%, 58.03% and 3.67% respectively and it was 224q. 354q and 367q in the year 1995, 1996 and 1997 respectively.

The annual arrival of Gram was 361572q. in the year 1993. It decreased at 21.22% and it was 284818q. in the year 1994. Again it decreased at 8.80% and it was 259753q in the year 1995. Then it increased at 68.65% and it was 438099q. in the year 1996. Next time it decreased at 26.80% and it was 320653q in the year 1997 in distt. Jalaun.

The annual arrival of pea was 658529q. in the year 1993. it increased at 34.53% and 6.39% in the year 1994 and 1995 and it was 885922q and 94257q in the year 1994 and 1995 respectively. Then it decreased at 6.43% and 24.71% in the year 1996 and 1997 and it was 881937q. and 663928q. in the year 1996 and 1997 respectively.

The annual arrival of pigeonpea was 108258q in the year 1993. It decreased 6.68%, 38.17%, 12.94% and 6.40% in the coming year and it was 101018q., 62459q., 54373q and 50889q in the year 1994, 1995, 1996 and 1997 respectively.

The annual arrival of lentil was 788863q. in the year 1993, and it decreased at 36.62% and 59.53% in the year 1994 and 1995 respectively. Then it increased at 7.97% and 37.50% and it was 218430q. and 301228 in the year 1996 and 1997 respectively.

The annual average price of Blackgram was Rs. 643 perq. It decreased at 9.02% and was Rs. 585 per q. in the year 1994. Then it decreased at 220.50% and it was Rs. 1875 perq. in the year 1995. Again it decreased 24.0% and 30.38% in the next two year and its price was Rs. 1425 and rs. 992 per q. in the year 1996 and 1997 respectively. The average price of Greengram was Rs. 800 per q. in the year 1993 and it was Rs. 1600 per q. in the year 1995 and 1996 respectively.

The average price of Gram was Rs. 852 per q. in the year 1993 and it increased at 19.24, its average price was Rs. 1016 perq. in the year 1994. Then it decreased at 25.68% and it was Rs. 755 per q. in the year 1995. Then it increased at 11.12% and 30.87% in the year 1995 and 1997 and it was Rs. 839 and Rs. 1098 per q. in the year 1996 and 1997 respectively.

The average price of pea was Rs. 765 perq. in the year 1993. It decreased at 1.43% and it was Rs. 754 per q. in the year 1994. Then it increased at 1.06%, 7.21% and 14.29% and it was Rs. 762. Rs. 817 and Rs. 933 per q. in the year 1995, 1996 and 1997 respectively.

The annual average price of pigeonpea was Rs. 830 per q. in the year 1993. It increased at 10.24% and 73.0% in next two years and it was Rs. 915 and Rs. 1583 per q. in the year 1994 and 1994 respectively. Then it decreased at 7.13% and 29.18% i the year 1996 and 1997 and it was Rs. 1470 and Rs. 1041 per q. in the year 1996 and 1997 respectively.

The annual average price of lentil was Rs. 638 per q in the year 1993. It increased at 45.45%, 8.64% and 31.51% respectively and it was Rs. 928 Rs. 1101 and Rs. 1448 per qtl. in the year 1994, 1995 and 1996 respectively,. Then it decreased at 27.48% and it was Rs. 1050 per qtl in the year 1995 in Mandies of Jalaun Distt.

In this way we have come to know production annual arrival and annual average price of pulses in Mandies of Distt. Jalaun in the duration of 1993 to 1997.



Chapter - 6

CHAPTER - 6

CONSTRAINTS & SUGGESTIONS OF IMPROVING MARKETING OF PULSE PRODUCTS.

Bundelkhand is a backward Region having poor infrastructure. It lacks Modern amenities in every sphere. It is observed in its geographical and other socio economic field. The marketing network of agricultural products is in miserable condition and is lagging behind. These characteristics may be seen in this region as well as Jalaun Distt. also. Farmers, Traders and consumer face these constraints in many ways. These constraints may be discussed in following way :-

Socio-economic Constraints :-

About 92% of pulses are grown in the rainfed areas. The erratic and uncertain behaviour of Monsoon affect the timely sowing of these crops. Marginal and sub marginal lands which are poor in fertility are used for pulse cultivation. When irrigation is available or land productivity improves, cropping pattern of rainfed area became more unfavourable to pulses. Most of the pulse Growers are small and marginal farmers who are unable to make adequate investment on pulse development due to two factors. Namely (1) Financial bottleneck and (2) high risk. Financial assistance of commercial banks is also not available to these categories of farmers due to the same reasons. Thus poor economic condition of small and marginal pulse growers is another constraint on development activities relating to pulse crops. There is no government support like crop insurance for the pulse growers to them to go for higher investment and production.

Pest and disease problem :-

Pulses are highly prone to large number of insects/pests and diseases as compared to cereals and other crops. Several fungal bacteria and viral diseases cause heavy damage to pulse crops. Pests like pod borer, jassids, thrips, bugs and others Mostly feed on these crops and reduce their productivity. There is no national programme for eradication of pests and diseases in pulse cultivation.

RESEARCH AND EXTENSION CONSTRAINT :-

No break through has so far been achieved in the development of HYV of pulses as in case of wheat and rice. Besides, there is no effective mechanism for facilitating the transfer of latest research. Findings/ technologies developed by Research bodies/institutes and harvest technology reduces the marketable surplus of pulses. As per ICAR estimates¹ about 1.5 million tonnes of pulses valued at Rs. 750 crore are lost every year due to ineffectient milling of pulses.

Unbalanced Development :-

Amongst pulses, Gram (Chickpea) and arhar (Pigeon pea) are two important crops; the share of these two crops together account for 43.4% of the total area and contributing about 50% to total production. There are other important pulses like Masoor, Moong and Urd which contain more protein. Yield of these crops are comparatively low, varying between 300-400Kg. per ha. An out efforts are required to push up the production and productivity of these pulses crops. Area under each of these pulse crops is comparatively small. Arhar (Tuar) pulse is consumed more both in rural and Urban areas followed by Masoor, Moong and Urd. But there is no package for balanced development of all the important pulse. Consumption pattern which is more favourable in respect of Arhar, Massor, Moong and Urad.

Ineffective Agricultural Marketing System :-

Though the forces of demand and supply determine the price of any commodity in the free market economy, the states intervention is necessary to correct the distortion taking place between these forces as well as to strengthen the Agricultural Marketing system so as to ensure remunerative prices to the growers and availability at reasonable prices

1.Pulses: Present Status and Prospects, Brij Bhushan and Renu Sobti, Yojana July31, 1992 (Vol.36 No. 13 Min. of Inf. and Broadcasting GOI New Delhi.)

to the consumer. In case of pulses there is no assured market like rice and wheat pulse growers sell their produce at different rates. There is wide variation between the price at farm gate and consumers end. Agricultural marketing system is not effectively operated to ensure remunerative fair price to pulse growers. market intervention which means

(a) Difficulty of Financing and Buyer :-

Since the number of buyers in an Agricultural market are limited, the large number of producers who intend to sell their produces in the market immediately after harvest in the bulk quantities, do not easily find a buyer to purchase their pulse crop. They have to more from traders door to door, godown with their crop in search of a buyer. This cause decline in the market efficiency as the marketing system fails to absorb systematically the in-flow of goods and there by increase input costs.

(b) Delay in Disposal of Produce and Competition Among the Growers :-

Owing to limited number of buyers in the market, the growers coming to market or (periodic hat) in large number to dispose of their crop immediately after harvest are extremely harnessed and subject to excession delay in the disposal of their produces. More over, this gives birth to a peculiar situation where the growers competete strongly with each other while selling their produce to the traders even accepting the comparatively lower price. Thus, marketing efficiency if measured in terms of quick disposal of produces and competitive nature of the market indicate substantial decline due to seasonal increase in market arrival which cause to increase the input costs on the one hand, while destabilises price on the other.

(c) Marketable Surplus :-

Pulse growers are not deeply interested in growing these pulses as well as they pay more attention towards cereals, due to these shortcomings they have a small share of products as a marketable surplus. The small share of marketable surplus weaken them to get fruitful gain of their

labour and these farmers are compelled to accept low price which offered by traders.

(d) Low Price and Seasonality Fluctuations :-

Every agri-product as well as pulses have trend to be ready to market in specific period. This interval is so long that small farmers are not in strong position to wait till prices rise in the market. They have compelled to sell their product as early it is fit to sell, so they get a small and low share of its price from traders. But trader get a high and remunerative price for these products from consumers. They take benefit of storage capacity and enjoy attractive price for pulses.

(e) Traders Lobby :-

The buyers or traders are organised and have their union to defend their side and forces farmers to accept offered price to them. But farmers are so scattered and have not any skill to oppose collectively so that they get proper share in consumer rupee. Traders are also skilled wise and cunning fellow but it is conceptually that farmers is a poor, careless and only price acceptor.

(f) Infrastructural Facilities :-

In Bundelkhand Region, there are few market yards having well equipped with all modern facilities. In many madnies farmers have lacks of public utilities such as fresh water, water through for cattle farmers rest house, sheds and place to store their arrival if price is very low. They are forced to sell their products on some day. Banking, Cooperatives and Govt. Agencies of Agri-marketing is necessary to competete with traders.

(g) Grading :-

Many farmers are unaware about grading and standardisation of agri-product. They have lack of knowledge about grading of agri-products such as pulses. So it is serious defect to calculate reasonable price according to standard of product.

(h) Transportation :-

Pulses are in nature giving less quantity as a market share so it is unprofitable to arrange large or medium vehicle to load pulses to arrive in market yard. Many villages are now lacking roads to fit for any vehicle except bullockcart. The all weather roads is a urgent need to continuous flow of products toward market.

(i) Credit Facilities :-

Agriculture is such a sector which get low amount as credit comparatively trade and industry. A large number of farmers are not prepared to get loans and able to use it properly. Pulse growers are not keen to improve their capacity and power by using credit facilities. But if credit granted the sanctioned amount become so low to use it effectively and illegal practice and middle men enjoys all benefit of loan. The poor farmer only suffer and pays instalments.

(j) Ware Housing and Storage :-

Mostly farmer live in Villages and sub urban areas. Their dwelling place have lack of proper arrangement of storage. So they use traditional system as grain bins or grain store comparted by house for its purpose. This system is not fit for storage and safety view point of grains. Simple aid to keep away from insects and other defects. Ware houses are fit for only large farmers and trader so a major part of producers are without proper facilities of storage.

(k) Processing :-

Pulse by nature is not consumed directly. These products are processed before any use but processing uses simple or out dated, machinery to dehusked pulses. Processes are lacking in machinery which save maximum share and give minimum wastage. In this way a Major part can be provided for consumption and it make able to reduce processing cost in order to downing its consumer price. After processed, pulse are ready to put in many uses as dal to prepare various commodities to consume.

(l) Information Network :-

Villagers are now desirous to know day per day change in prices of agri-products during peak period. After harvesting they are ready to sell their products. So in order to get proper share, farmers try to know price trend of agri-products. News papers prices in not in reach of itennerent farmer which are out of reach of any publishing media or it is not possible to get radio bulletin about prices of main Mandi but their is so much difference in main Mandi and sub Mandies. But prices are broadcast of leading mandies of the states.

(m) Level of Literacy :-

There is a low rate of literacy in Villages so it is a clear fact, farmers have lack of education and it is also a decision making factor and changing opinion and out look toward occupation views. Low level of literacy is a indicator of under development and lack of understanding. Because they have lack of knowledge and are not desirous to adopt modern and updated technology. so they improve themselves and enjoy every possible facilities for their welfare. These short comming affected marketing efficiency of farmers.

(n) Operating by Unskilled Man :-

Our Agricultural activities are run by unskilled worker and hired labourers so they have lack of interest in cultivation practices. It is observed that its result falls upon productivity and efficiency of holding. Now a days major acticities of farming practice needs mannual labour. So it is necessary to employ updated technology and optimal machinery to modernise farming in order to increase marketable surplus and strengthen farmer community.

(o) Unseen Paradox :-

It is well known fact as observed by me. that farmer's educated and unemployed youth who are not perfect fit to get job but unwillingly engaged in farming practices or family occupation. These educated fellow are in fix, they are unable to farming practices and having lack of knowledge to add new methods and new invention to update farming

practices in order to get maximum production. But they live in Fool's paradise and makes castles in the air. So it is counteraction of education. This trend presents fearful picture. But this unwilling working force is a creative power if we can use them by giving modern and scientific way of farming in refresher way so that it may present fruitful return in both production and marketing.

Suggestions of Improving Production & Marketing of Pulses Products

FUTURE STRATEGY

In view of the various constraints against development shortage of pulses will continue to be a great conserved in the near future. The deficiency in the intake of proteins from pulses does not appear to be made good by the substitutes, particularly in the case of poor and low income group of people. Therefore, there is a great need for adopting short term and long term strategies for enhancing the availability of pulses at affordable prices.

The following strategies have been suggested.

1. Breeder seed/improved varieties of seeds of pulses crops should be produced by Agricultural Universsties. Research Institutes, state seed farms, National seeds production corporation and other seed producing agencies. The distribution of HYV of pulses may be channelised through cooperatives/panchayat/growes association.
2. There is need to identily low productivity area and other areas having high production potential. Accordingly, block-wise field demonstration plans should be drawn up to popularise the adoption of improved pulses production technology. Operational efficiency of the extension machinery will have to be improved to ensure adequate & the identified pulse blocks.
3. Pulses are highly prone to several kinds of pests and diseases. An integrated pest management scheme with more emphasis on biopest

control for pulses growing districts needs to be introduced to effectively control, and eradicate the pest and diseases. Short term measures, like training on effective use of chemical, pesticides, safety in handling plant protection activities supply of chemical and equipment at subsidised rates to small and marginal growers have to be adopted to ensure healthy growth of these crops.

4. Price support and assured market are two crucial factors which act as effective instrument for motivation farmers to go in for pulses production.
5. Encouraging pulses growers cooperatives or associations for milling and marketing of pulses and modernisation of inefficient traditional dal milling/processing units.
6. Encouraging educated unemployed rural youth to set up dal milling units in the nucleus pulse growing areas.
7. Developments of location specific/pest resistant varieties.
8. National programme of pulses development (NPPD) which, should include the following components :-
 - (a) Distribution of minikits of improved varieties of seeds, fertilizers, pesticides and plant protection equipment and agricultural implements for small and marginal formers, including weakers sections of the farming community.
 - (b) Soil reclamation programme, fixing target of problem land for treatment.
 - (c) Crop Insurance scheme exclusively for these categories of farmers to minimise risk of investment in pulse production.
 - (d) Credit facilities at low rate of interest to pulse growers.

- (e) *Special assistance to the pulse growing states for popularising improved methods of production practices through wider publicity.*
- (f) *Evolving of new technology for safe storage of pulses.*
- (g) *Organisation of refresher course/training for extension workers, subject specialists and pulses growers on use of latest production technology.*
- (h) *District level committee comprising experts from ICAR on selection of suitable varieties and transfer of latest research finding from lab to land may be set up.*

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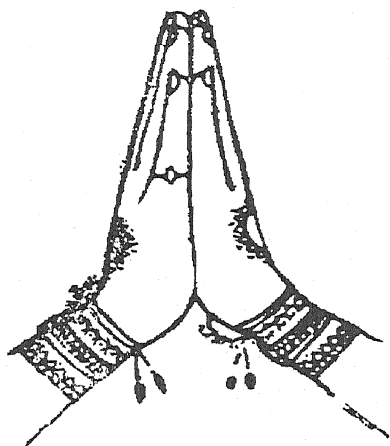
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Thank you

